TRIAL EXHIBIT 5295

CONFIDENTIAL - CONTAINS BUSINESS SECRETS

REPLY BY ORACLE CORPORATION

30 July 2009

Case COMP/M.5529 – Oracle/Sun

Questions and comments on the SECOND draft Form CO of 24 July 2009

28 July 2009

I.   MySQL – databases

1   *As a general comment regarding market shares, when available, please also provide the underlying data used to calculate the shares (e.g. for table 3 in paragraph 142, please provide the underlying shipment figures).*

Please refer to the CD-ROM submitted together with these responses that includes the market reports available to the Parties and relied upon for market share data.

2   *In annex C and paragraph 141 you provide the worldwide RDBMS revenue as well as the revenues and the shares of the different vendors for the years 2005 to 2007. Please provide the same set of data separately for RDBMS based on Unix, RDBMS based on Linux Open Source Systems, Windows based RDBMS and others (please specify). Please provide as well the worldwide RDBMS shares for shipments by revenue separately for RDBMS based on Unix, RDBMS based on Linux Open Source Systems, Windows based RDBMS and others as well as the underlying data used to calculate the shares (see paragraph 142 in the second draft form CO).*

Please refer to the IDC Reports "Worldwide RDBMS 2007 Vendor Analysis: Top 10 Vendor License Revenue by Operating Environment and 2008 Year in Review" and "Server Workload Forecast and Analysis 2005-2010", which contain the requested information and are included in the CD-ROM accompanying these responses.

It would be a mistake to artificially segment the database space based on operating systems as this is not a competitively meaningful classification. For example, there is no question that Microsoft's SQL Server competes head to head with Oracle, even though SQL Server only runs on Microsoft Windows. Similarly, Microsoft Windows competes against Linux and Unix, Microsoft .NET competes against Java, Microsoft Internet Explorer competes against Firefox, Microsoft Exchange competes against Lotus Notes, and Microsoft Sharepoint competes against IBM Websphere – even though, in each case, the Microsoft product only runs on Windows.

The reason for the competitive irrelevance of the underlying operating system is twofold. First, the vast majority of customers chooses the database first and then the operating system, not vice versa. In other words, database functionality drives the customer's choice. Second, virtually all database deployment environments are heterogeneous, that is, most database customers run mixed Windows, Unix, and Linux IT environments. It would, therefore, be completely illogical to conclude that Oracle

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competes against Microsoft (because Oracle runs on Windows) but Microsoft doesn't compete against Oracle (because Microsoft only competes on Windows).

3. *Please provide the price of a commercial license of MySQL. Please provide also the price of a commercial subscription of MySQL. Please distinguish between different commercial editions.*

The MySQL Enterprise subscription is offered at four different levels:

- Basic: $599 per year (Eur 427)
- Silver: $1,199 per year (Eur 855)
- Gold: $2,999 per year (Eur 2,140)
- Platinum: $4,999 per year (Eur 3,567)

For MySQL Enterprise, support is not offered separately by Sun and the only way to get support is through the subscription. The differences between the levels of support include response rates for support questions, as well as additional features and services provided under the subscription. Details can be found at

http://www.mysql.com/products/enterprise/features.html

For the MySQL Embedded Server, customers purchase a license and support separately. The License is offered at three levels and Support is offered at four levels. The License prices are:

- Classic OEM Production License: $399 per server (Eur 285)
- Pro OEM Production License: $499 per server (MySQL Classic plus InnoDB storage engine) (Eur 356)
- Advanced OEM Production License: $1,199 per year (MySQL Pro plus horizontal table and index partitioning) (Eur 855)

The Support prices are:

- Basic Support: $7,499 per year (Eur 5,350)
- Silver Support: $15,000 per year (Eur 10,702)
- Gold Support: $50,000 per year (Eur 35,674)
- Platinum Support: $75,000 per year (Eur 53,510)

Again, the main differences lie in the number of incidents, response times, and additional service offerings. Details can be found at

http://www.mysql.com/oem/support.html

Please see **Annex 36** of the Form CO for a list of prices for commercial licenses of MySQL and commercial subscriptions of MySQL based on list price and average sales price.

4. *In relation to annex 17, please provide also Oracle's revenue separately for each of its database products as presented in paragraph 196 of the draft form CO (i.e. Database 11g, TimesTen In-memory Database, Berkeley DB and Database Lite)*

Please refer to **Annex 17** of the Form CO, which has been amended accordingly.

5. *You submit in Annex 18 of the second draft form CO Sun's revenues from MySQL in 2008 in Euros. Please distinguish revenues from (i) sales of commercial licences (ii) technical support, and (iii) other (to specify)*

Please refer to **Annex 18** of the Form CO as amended.

6. *You submit in footnote 85 of the draft form CO that Sun derives a significant portion of its MySQL revenues from OEM licence agreements (commercial agreements). You also submit that Sun earned less than 60,000 Euros in 2008 from such licences. Please explain.*

The reference to 60,000 is a clerical error. The correct figure is approximately EUR 30 million.

7. *In answer to question 13 of 3 July 2009 you provide annex 22 which presents an overview of the purchase price allocation. However, please provide in addition a more descriptive overview on what "assets" Sun acquired when it acquired MySQL AB in 2008, i.e. customer contracts (number of contracts, type of contracts, annual revenues etc.), personnel (number and type of staff), IP rights etc.*

By acquiring MySQL AB, Sun acquired all of the assets of MySQL AB and its subsidiaries, including the following assets.

Customer contracts

When Sun acquired MySQL, it had approximately 52,000 registered individual customers (some of which represent different individual customer contracts within a single corporate customer entity). The main type of MySQL customer contracts acquired were:

    (i)   OEM customers;

    (ii)   Subscription / enterprise customers; and

    (iii)   Licensed professional support customers (i.e. including training consulting, OEM support etc).

Personnel

Of the approximately 450 personnel in the MySQL business when acquired by Sun:

    (iv)   approximately 110 were employed in engineering roles;

    (v)   approximately 60 were employed in finance and administration roles.

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(vi)   approximately 20 were employed in marketing roles;

(vii)   approximately 100 were employed in sales roles; and

(viii)   the remainder were employed in a variety of different roles including internal training, internal technical support roles, and internal consultancy roles

IP Rights – Domain names

In addition to various MySQL trademarks and technology patents, Sun acquired the following domain names upon its acquisition of MySQL:

1   *Country specific*

(i)   Asia: mysql.asia.

(ii)   EU: mysql.eu, alzato.eu:

(iii)   US: mysql.us.

(iv)   Denmark: mysql.dv.

(v)   Finland: mysql.fi.

(vi)   France: mysql.fr.

(vii)   Germany: mysql.de, mysqlpress.de, mysql-press.de, planetmysql.de.

(viii)   Italy: mysql.it.

(ix)   Japan: mysqlconf.jp, mysql.co.jp, mysql.ne.jp.

(x)   Luxembourg: mysql.lu.

(xi)   Philippines: mysql.ph. and

(xii)   Sweden: mysql.se.

2   *Generic:*

(i)   alzato.net

(ii)   alzato.org.

(iii)   findamysqldba.com.

(iv)   mysql.biz.

(v)   mysql.com.

(vi)   mysql.dk.

(vii)   mysql.eu:

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(viii)   mysql.info;

(ix)   mysql.org;

(x)   mysql2.com;

(xi)   mysqlstudio.com;

(xii)   mysqlfrontend.com;

(xiii)   mysqlclient.net;

(xiv)   mysqlgui.net;

(xv)   mysqlpress.biz;

(xvi)   mysqlpress.com;

(xvii)   mysqlpress.net;

(xviii)   mysqlpress.org;

(xix)   mysqlpress.info;

(xx)   mysql-press.biz;

(xxi)   mysql-press.com;

(xxii)   mysql-press.net;

(xxiii)   mysql-press.org;

(xxiv)   mysql-press.info;

(xxv)   mysql-server.net;

(xxvi)   planetmysql.com;

(xxvii)   planetmysql.net;

(xxviii)   planetmysql.org;

(xxix)   planetmysql.info;

(xxx)   planetmysql.biz;

(xxxi)   sakila.net;

(xxxii)   sakila.org;

(xxxiii)   sakila.info;

(xxxiv)   sakila.biz; and

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(xxx1 vbm/sql.com.

Property

A total of 15 commercial property leases were acquired in the following countries

  (i) Germany (1),

  (ii) Iceland (1),

  (iii) Japan (3),

  (iv) Sweden (4), and

  (v) USA (5)

8. *In paragraph 110 of the draft form CO you submit that the appropriate market definition for databases should include all database products. Please explain why you do not consider it appropriate to further divide the database market into a market for "legacy" database products and a market for distributed database products.*

In *IBM Informix*[1], the Commission considered markets for "legacy" database products (e.g., databases running on a mainframe computer) and distributed database products (based on a non-centralised or "distributed" client-server network), but left open the question of whether legacy and distributed database products constituted separate markets.[2]

Similarly, other existing Commission precedent supports definitions of software markets that are hardware- and operating system-agnostic. For example, in the 2004 *Microsoft* Decision, upheld by the Court of First Instance, the Commission defined the market for PC operating system software as including operating systems for both Wintel and Apple-based personal computers (PCs), even though at the time of the decision both types of PCs ran on very different and incompatible hardware architectures (e.g., Intel vs. PowerPC CPUs). Similarly, in its ongoing investigation regarding Internet browsers, the Commission has defined the relevant market as encompassing all browsers regardless of client operating system, even though for example Apple's Safari browser does not run on the Linux PC OS.

From a demand perspective, as discussed in the response to Question 2 above, customers usually choose the database first and the operating environment, including operating system and underlying hardware second. We understand the Commission's question as a reasonable inquiry into the case of legacy applications and hardware, because in those cases the existing solution may arguably be more of a constraint on customer choice than in a standards-based environment.

That said, if a legacy database runs on standard hardware and operating systems, then it clearly competes with other database options such as Microsoft's SQL Server, IBM

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IBM Informix, paragraphs 7-12.

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Oracle, Sybase, PostgreSQL, MySQL, etc. If the legacy database runs on mainframes, then substitutability depends to a great extent on how well the mainframe is integrated in the company's overall IT environment. If the integration is tight, then migration to distributed database options is easy and commonplace, such that prices in the legacy space are constrained by the availability of distributed database options. Hence, there are no indications for a separate market. Moreover, even if the mainframe is more or less stand-alone hardware, major vendors providing database solutions for non-mainframe hardware and operating systems also provide solutions for mainframes (e.g., IBM, Oracle, MySQL, Sybase, with the notable exception of Microsoft, which only supports its own Windows Server operating system that is not offered for mainframes)

At the end of the day, nothing hinges on whether legacy solutions and distributed database products are included in the same market and it is submitted that the Commission need not resolve the issue that was left open in *IBM Informix*.

11 *You submit in paragraph 117 of the second draft form CO that Sun does not object to companies using the name MySQL (for example, product compatible with Sun's MySQL). Please explain whether this is a tolerance from Sun, or an obligation that Sun must respect.*

Paragraph 117 states: "*With regards to the use of the MySQL trademark by forks of MySQL or companies offering technical support for MySQL, the MySQL trademark is owned by Sun and the MySQL GPL license does not grant a license to Sun's trademarks, which are a vital intellectual property right. However, Sun does not object to companies using the name MySQL in a manner that is fair use and does not constitute infringement under applicable law, including trademark law. Specifically, because MySQL is a trademark of Sun, a vendor could not call its product MySQL or a derivative of MySQL that would cause confusion or be misleading as to the origin or quality of the product (including its compatibility with Sun's MySQL), but the vendor could refer to its product as being compatible with Sun's MySQL, provided that such a statement is true and correct.*"

The above describes the general position under trademark law and is not simply a description of Sun's position as a matter of tolerance. As stated, Sun does not object to companies using the name MySQL in a manner that is fair use and does not constitute infringement under applicable law. In all cases, Sun is applying an existing legal framework to the use of its MySQL trademark by others.

10 *Please indicate whether companies providing technical support to users of SQL can use the name SQL to describe their activities (question 21 of the previous questionnaire). This is not directly addressed in the second draft form CO.*

Companies providing technical support to users of MySQL can use the MySQL name, subject only to the general restrictions under trademark law.

11 *Paragraph 147, bullet point "The open source nature of MySQL eliminates potential for anti-competitive effects". Why has Sun sold commercial MySQL licenses to Oracle and IBM?*

Dual licensing is a common monetization strategy for open source products. MySQL has been available under a dual license from its inception. In practical terms, the vast majority of MySQL users choose the open source version. Customers who are willing to abide by the terms of the GPL have no need for a commercial license. Those customers include companies that, for example, use the product only internally and do not offer it for distribution, (e.g., Google or Craigslist's use of MySQL to provide web services to users). Other customers are willing to make their modifications back to the commons as required by the GPL license.

Finally, there are some customers who want to (a) incorporate MySQL into their applications; and (b) distribute those applications without disclosing the source code. These customers need a commercial license without the reciprocal restrictions of the GPL.[*] With respect to Oracle and IBM, Sun has never refused to sell commercial MySQL licenses to any potential customer or partner and Oracle and IBM have likely taken commercial MySQL licenses for one of the above two reasons.   This is relatively rare, as evidenced in Sun's limited revenues from such commercial licenses.[†] This suggests that the rights granted under the GPL license are sufficient in the vast majority of cases.

12. *Please provide alongside the Form CO the complete CRM and HQ App databases used to evaluate the closeness of competition between Oracle databases and MySQL (period, 1 May 2007 to 1 May 2009)*

Oracle will provide a response to this question as soon as possible after notification of the Form CO.

13. *You submit at paragraph 252 of the second final CO that Sun's "Project Peter" aims to some extent at assisting customers to migrate from proprietary databases to MySQL.   Please provide internal documents from Sun in relation to this project and in particular with regard to the migration of customers from proprietary databases to MySQL.*

Annex 35 to the Form CO is a slide presentation that describes a proposed marketing campaign designed to increase sales of MySQL, including by migrating suitable customers and/or encouraging customers to use MySQL alongside proprietary databases.   Whilst initial training took place, the campaign itself was abandoned and never implemented.

14. *You submit that Microsoft databases only work on Windows. Please indicate whether all databases from competitors work on both Windows and non-Windows operating systems.*

Yes, Microsoft databases only work on Windows. To the best of our knowledge, all other databases work on multiple operating systems, including both Windows and non-Windows operating systems.   Specifically,

[*] See Paragraph 147 of the Form CO.
[†] See Paragraph 147 of the Form CO - Filings FY20-7: Subscription of MySQL License Cluster License SUPPORT-FEE, Filings FY21 No Subscription of MySQL License Cluster License   SRIT-SW-FTC), Filings FY2009: Subscription of MySQL License Cluster License   SRIT-SW-FTC)

- Oracle runs on several operating systems, including Windows, the Apple Mac OS X, Linux, Solaris, AIX, and HP (http://www.oracle.com/technology/software/products/database/index.html).
- MySQL runs on Windows, Linux, Mac OS X, Red Hat, and Solaris operating systems (http://dev.mysql.com/downloads/cluster/7.0.html).
- Sybase functions on several operating systems, including Windows, Linux, Macintosh, Sun Solaris, IBM AIX, and HP-UX Itanium (http://www.sybase.com/detail?id=1012544).
- IBM DB2 is available for Windows, Linux, and Mac OS X operating systems (http://www-01.ibm.com/software/data/db2/express/download.html).
- PostgreSQL operates on Windows, Mac OS X, Linux, and Solaris operating systems (http://www.postgresql.org/download/).
- EnterpriseDB is available for Linux, Windows, and Mac OS X operating systems (http://www.enterprisedb.com/products/pgdownload.do).
- Ingres is available for Sun Solaris, Windows, and Linux operating systems (http://www.ingres.com/downloads/).

It most definitely does not follow from this fact that one should define a market for database by operating systems. As discussed above in response to Question 2, just as it is readily apparent that Microsoft Windows competes against Linux and Unix, that Microsoft .NET competes against Java, and that Microsoft Internet Explorer competes against Firefox, Microsoft Exchange competes against Lotus Notes, and Microsoft Sharepoint competes against IBM Websphere—even though, in each case, the Microsoft product only runs on Windows—there is no question that Microsoft's SQL Server is a competitor with all other databases. As noted above in the answer to Question 2, database customers often choose the database first and then the operating system environment; only the smallest of customers choose database based on what operating system they run. Moreover most customers who employ servers running Linux and or UNIX will also have servers running Windows, so the relevance of defining database markets by operating system is limited. It would be completely illogical, for example, to conclude that Oracle competes against Microsoft (because Oracle runs on Windows) but Microsoft doesn't compete against Oracle (because Microsoft only competes on Windows).

15. *Issue 19. Regarding competition between MySQL and Oracle databases, I am told K cites open source databases (including MySQL) as competitors (p.11) and more generally open source alternatives to products and software are indicated as "directly or indirectly" affecting Oracle's product sales (p.10). These elements seem to suggest that Oracle does view MySQL and more generally open source software as being part of a competitive landscape and as affecting its sales in a stronger way than suggested by the Forms 10-K. Please comment.*

In the Form 10-K, the term competition is used to identify players in the general database space. This common business and investor usage of the term, however, lacks the rigor required by the technical use of competition for market definition purposes. For purposes of market definition, competitors are firms that constrain the pricing of each others' products which, in turn, requires a high degree of substitutability from a customer's point of view. As between Oracle and MySQL, the degree of substitutability is minimal. The chart below highlights the critical differences between Oracle and MySQL.

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	ORACLE 11* DATABASE	MySQL	Comment
Data set maximum practical size	Very large (hundreds of terabytes)	Small (hundreds of gigabytes)	Largest MySQL TPC-H: 300G on special hardware. Largest Oracle TPC-H: 30T on general purpose hardware. Largest Oracle customers: well over 100T
Data set complexity	Relational, complex objects, XML, spatial, multi-dimensional, etc.	Relational	Applications targeted by Oracle have complicated, multi-faceted behaviors. Oracle must store, manipulate, and analyze sophisticated non-relational data as well as perform straightforward relational queries.
Concurrency	Millions of updates per minute	Limited	Oracle results validated by audited benchmarks. No audited MySQL transaction benchmarks are published.
Consistency	Guaranteed across huge datasets	Weak; only across smaller dataset	Stronger MySQL consistency requires use of Oracle's InnoDB storage engine, still limited to smaller data sizes
Reliability	Can have no single point of failure	Always multiple points of failure	Oracle can be configured such that no single external hardware or software failure stops the database.
Deployment & operation	Complex; deep expertise required	Simple, embeddable, no expertise required	Oracle customers must carefully plan database deployments and maintenance
Ongoing support	95+%	Tiny fraction purchases support; 85% renew	Difference due to greater complexity of the Oracle product and mission critical nature of customer applications running on Oracle databases

Oracle and MySQL thus compete only at the edges of their functionality and do generally not exert competitive pressure on each other. This is confirmed by the very limited instances of head-to-head competition between Oracle and MySQL as evidenced by Oracle's CRM and HQ Apps records. Thus, while there may be some competitive interaction between MySQL and Oracle databases at the outer edges of their functionality, we do not regard that competition as significant enough to include both products in the same relevant market.

16. *Annex 31-A-(1), slide 5. Please explain what the "Database machine" is.*

The "Database machine" refers to computer or special hardware that is specifically optimised to access, store, and retrieve data from a database.[5]   The HP Oracle Database Machine (Exadata) is an integrated system of HP hardware and Oracle software designed to run multi-terabyte data warehouses.

17. *You submit in Annex 31-A-(8), page 2, that "Oracle Database Express Edition provides a truly free alternative to MySQL Enterprise and the Oracle Database Standard Editions provide low-cost alternatives to MySQL -- without the "one year" catch".*

The competitive intelligence document in Annex 31-A-(8) is one of a number of sales aids that are not intended to be analyses of competition among products or market participants. The purpose of the referenced document is to provide the Oracle sales force with talking points if a customer inquires about MySQL. As discussed above, Oracle and MySQL compete only at the fringes of their respective functionalities. Thus, the Oracle sales force must, at times, explain how Oracle is different from MySQL, *i.e.*, in most instances *why MySQL is not what the customer needs.* For example, the document states (also on p.2): "*While MySQL makes claims around scalability, flexibility, performance and high availability as key selling points of MySQL Enterprise the reality is that MySQL does not scale up, and has nothing at all like RAC. MySQL lacks many of the basic features needed for enterprise deployments, including parallel operations, on-line operations (e.g., reorganization, indexing, etc), and lacks key features for availability and security.*" This reflects the reality that,

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[5]   *See*: http://www.oracle.com/database/database-machine.html

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figuratively speaking, if an Oracle sales person and a MySQL sales person show up for the same customer meeting, one of them is in the wrong room.

The statement cited in Question 17 above is intended to set the record on pricing straight. MySQL often goes to market touting a cost advantage. The document provides a rebuttal point to the Oracle sales force, here that MySQL's claim that "for the price of a single CPU of Oracle Database Enterprise Edition MySQL users can deploy an unlimited number of MySQL Enterprise Servers" is only partially accurate because "the fine print says the offer is only good for one year." Of course, this does not suggest that Oracle and MySQL compete on price, because, as discussed above, the products are vastly different. As a general matter, we trust that the Commission will view this and similar selling aids in their proper context, namely as talking points for the sales force produced by small internal marketing teams and not as formal market or competitive analyses or reflections of the Parties' strategic or competitive positions.

a. *Please describe Oracle Database Express Edition, Oracle Database Standard Editions and MySQL Enterprise, and compare the functionalities and costs of these databases.*

Oracle Database Express Edition (XE) and Oracle Database Standard Edition (SE) provide subsets of Oracle Enterprise Edition functionality, and are compatible with "full" Oracle Enterprise Edition (EE). For customers, Oracle XE and Oracle SE provide a common platform for organizations that have departmental applications that may grow or that need to share data easily with the enterprise-level database. For such organizations, the Oracle family of database products facilitates standardizing technology across an environment, leveraging organizational skills and simplifying IT management. XE and SE are also attractive to ISV's and OEMs who wish to offer products with limited database functionality requirements, but that may ultimately be connected to a back end Oracle database. All of the products in the Oracle database family feature complex functionality, powerful SQL for data manipulation and analytics and more ad availability, reliability and security.

In contrast, MySQL Enterprise is suitable for applications with simpler requirements. MySQL lacks many fundamental features and functions of an "enterprise-class" database. MySQL was designed for, and is very popular with, web content serving applications (such as social networking, etc.) where data consistency is not always a requirement, security needs are simple and data is often added and queried but relatively rarely updated or changed in a transactional context. Again, by way of contrast, the Oracle database is the leading platform for industrial-strength OLTP (on-line transaction processing) and business intelligence (data warehousing/analytics) applications, and has many unique features required for "industrial strength" deployment scenarios.

According to published lists, the prices of the various products are as follows:

- Oracle Database Express Edition: free for download, deployment and distribution.

- Oracle Database Standard Edition: $17,500 perpetual processor

- Oracle Database Standard Edition One: $5800 perpetual processor

- MySQL Enterprise Server (free for internal use (or for distribution under the GPL license), commercial licenses from $595 server/year to $4995 server/year

b. *Please describe which other products compete with Oracle Database Express Edition and Oracle Database Standard Editions*

Other products that compete with Oracle Database Express Edition and the Oracle Database Standard Editions are products from vendors that compete with Oracle Enterprise Edition database, including, for example, IBM (DB2 Express Edition) and Microsoft (SQL Server Express Edition). These products all offer subsets of functionality compared to their "enterprise-class" family members. Like the Oracle products, the IBM and Microsoft Express Editions are scaled back, but fully compatible with their higher-end versions, and all three product families are designed and used primarily for transaction processing and data warehousing / analytical applications — in contrast to MySQL, which is primarily aimed at web applications that have much less stringent requirements for transaction processing.

c. *Please provide the revenues to Oracle stemming from Oracle Database Express Edition and Oracle Database Standard Editions in 2007, 2008 and 2009 (January–June), in Euros and as proportion of Oracle's databases revenues.*

The revenues and percentage contribution for Standard Edition and Standard Edition One are as follows, in constant dollars for each of our last three fiscal years:

Standard Edition

FY2007 $267,188,488 (7.29%)(EUR 295,636,379)

FY2008 $255,167,886 (6.56%)(EUR 75,512,021)

FY2009 $231,717,488 (6.39%)(EUR 167,425,930)

Standard Edition One

FY2007 $126,518,060 (3.45%)(EUR 97,572,141)

FY2008 $127,483,913 (3.28%)(EUR 87,702,190)

FY2009 $129,251,503 (3.57%)(EUR 93,389,281)

18. *Evidence 8 mentions (and 9) which was purchased by Oracle. In Annex 51 B (12), slide 7 indicates "One savage engine (InnoDB) acquired by Oracle to slow MySQL's rise". Please explain this quote. Also indicate the context and date on which this internal document was prepared. Please also comment on the quote on slide 8 "Two*

Views on Oracle Reaction: They'll decide to kill us; They already decided that a few years ago".

This presentation was delivered on December 5, 2007 to the Sun Board of Directors prior to the MySQL acquisition. The context of the board meeting was to review strategic options following MySQL's expression of interest in an acquisition. Four inhibitors to Sun's growth were cited, three of which had external growth as potential solutions (see slide 2). The corporate development team evaluated MySQL (Minerva) at this meeting and received the board's approval to further investigate a transaction with MySQL. As part of this discussion, a concern was voiced that Oracle purchased Innobase Oy (a MySQL partner) to gain control over InnoDB as a key storage engine for MySQL. However, Oracle renewed its agreement that allowed MySQL to distribute InnoDB with the MySQL database (on the same terms--including terms that were not favorable to Oracle) and Oracle invested significant resources in aggressively developing and upgrading InnoDB. Therefore, the concern identified in the slide "Minerva Risks / Challenges," never materialized.

19. *In Annex 31-B-(5), page 5, you refer to MySQL advanced as an instrument resulting in bigger deals. Please describe MySQL advanced and compare its functionalities and costs with those of MySQL, Oracle Database Express Edition, Oracle Database Standard Editions and MySQL Enterprise.*

The product known as MySQL Enterprise Server Advanced includes a feature called "partitioning" that helps manage large tables by creating separately manageable sets of rows (partitions). The partitioning feature is not part of the standard MySQL Enterprise Server, but is available only with the "Advanced" edition. The partitioning feature is available as part of MySQL Enterprise Server subscription under a GPL license for enterprise use with the Gold and Platinum subscriptions, which are available at $2999 and $4999 per server, per year. (The Gold and Platinum subscriptions include different service offerings, as described here: http://www.mysql.com/products/enterprise/features.html.)

In the Oracle family, a somewhat comparable but much more powerful feature is called the "Partitioning Option". This option is not offered with either Oracle Database Express Edition (free), Oracle Database Standard Edition ($17,500 perpetual per processor) or Oracle Database Standard Edition One ($5,800 perpetual per processor). Only users of Oracle Database Enterprise Edition ($47,500 perpetual per processor) can purchase the Partitioning Option for $11,500 perpetual per processor. The MySQL partitioning feature offers a small subset of the functionality of the Oracle Partitioning Option, though it is modelled on the Oracle capability. Missing in MySQL partitioning are such features as parallel operations, management operations, interval partitioning, and the like.

20. *In Annex 31-B-(5), page 11, you refer to MySQL Cluster. Please describe MySQL Cluster and compare its functionalities and costs with those of MySQL, MySQL advanced, MySQL Enterprise, Oracle Database Express Edition, and Oracle Database Standard Editions.*

MySQL Cluster is essentially a version of the MySQL Enterprise Server. Instead of using MySQL Enterprise Server with the MyISAM or InnoDB storage engines, which

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store data on disk, MySQL Cluster uses the NDB storage engine,[6] where the database is kept in memory, rather than on disk.

A storage engines is responsible for transaction management, concurrency control, and crash recovery within the database. In MySQL Cluster, copies of user data are kept on multiple nodes to avoid data loss in case of failure. This contrasts with "normal" MySQL Enterprise Server use with a storage engine like InnoDB or MyISAM, where data is primarily kept on disk. Thus, a meaningful comparison can be made between using InnoDB, MyISAM and the NDB engine, but there are no meaningful differences between the various versions of the MySQL server. For example, MySQL Advanced is, as noted above, the MySQL Enterprise Server with the inclusion of a partitioning feature. All editions of Oracle Database products (whether XE, SE or EE) store data on disk.

MySQL Cluster pricing is not public. MySQL Enterprise Server pricing (including Advanced) is available here: http://www.mysql.com/products/enterprise/features.html. Pricing of the Oracle Database editions is as follows, for perpetual licenses, per processor:

- Express Edition: free

- Standard Edition: $17,500

- Standard Edition One: $5,800

- Enterprise Edition: $47,500

21. *You submit in Annex-B-(8), page 1, that a 2008 Independent Oracle Users Group report identified that 35% of Oracle customer are also using MySQL. Please provide this report. See Annex C-1.*

Attached as **Annex 34** to the Form CO is Open Source in the Enterprise New Software Disrupts the Technology Stack, by Joe McKendrick, Research Analyst - September 2007. The reference to a 2008 report is a clerical error; the most recent report is Spetember 2007.

22. *You submit in Annex-B-(8), page 2, that MySQL provides 90% of Oracle, IBM and Microsoft features. Please describe the particular features or Oracle, IBM and Microsoft that are not provided by MySQL. In addition, please provide an estimation of oracle and IBM features that are provided by Microsoft.*

This is a marketing claim by Sun that compares rudimentary implementations of certain functionalities with full-fledged implementations, ready to handle mission-critical tasks. For example, MySQL claims to handle transactions, which is true to an extent. However, financial institutions, for example, would not rely on MySQL for real-time transaction processing because the transaction handling is not sufficiently robust for mission critical applications.

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[6] *See* http://docs.sun.com/source/820-5417/ccsg-ndb.html#ccsg-ndb-sql-nodes

See the answer to Question 15 for an overview of certain key functionalities that only exist at a very rudimentary level in MySQL compared to Oracle. In addition, there are many features that Oracle (and in some cases by Microsoft and IBM) offer that are not supported in MySQL, including:

- Database security — roles, encryption

- Data management — on-line reorganization, on-line index creation, on-line schema modifications, data compression, advanced partition management

- Data access — bit-mapped indexes, parallel query, parallel insert/update/delete, hierarchical query

- Analytics, advanced functions such as ranking, statistical analysis features.

- Availability — flashback query and flashback database (unique to Oracle), incremental, remote, secure backup

While Oracle' database offering supports more features than either IBM or Microsoft's database products, all of these products are more functional and or have more robust functionality than MySQL.

II. **Middleware**

23 In Section 1, you list the parties' offerings. Please specify which of the parties' offerings products in the field of middleware are open source products. Please also indicate which of the competitors' products is are open source.

All of the following are completely or majority open-source:

- GlassFish Enterprise Server
- GlassFish Web Stack
- OpenSSO Enterprise
- GlassFish Web Space Server
- Competitors products that are open-source include:
- JBoss Platform
- Spring Source
- Apache Geronimo
- Apache Tomcat
- WebTide Jetty
- MuleSource Mule ESB
- IONA FUSE ESB
- OpenLDAP
- Additional products not previously identified comprise
- GlassFish ESB
- OpenDS Standard Edition

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24. *We understand that you consider all types of middleware as belonging to an overall product market for middleware. Please provide information on Oracle's and on Sun's turnover from middleware products EEA in the years 2006, 2007 and 2008.*

Oracle's total Middleware revenues in 2006 were 1,203,467,315 USD (952,488,972 EUR). Of those 528,128,547 USD (135,542,095 EUR) were new license revenues and 675,338,768 USD (556,945,677 EUR) were maintenance and support revenues.

Oracle's total Middleware revenues in 2007 were 1,073,385,144 USD (EUR 1,511,088,520). Of these 950,029,792 USD (EUR 757,171,295) were new license revenues and 1,023,355,351 USD (787,913,224 EUR) were maintenance and support revenues. FY2008 Middleware new license revenue was 272,778,809 USD (EUR 591,018,533).

Sun's total Middleware revenues were USD REDACTED (EUR REDACTED) in 2006, USD REDACTED (EUR REDACTED) in 2007 and USD REDACTED (EUR REDACTED) in 2008.

25. *Concerning potential middleware submarkets by application you provide information in Section 7 for "application server software", "portals", "ESB software" and "process automation middleware (BPMS)". Please add for each of these potential middleware submarkets information of each of the parties' turnover for EEA. Please specify the turnover resulting from sales, turnover resulting from licensing and turnover from support services.*

Oracle previously provided this information in **Annex** 17 of the Form CO.

	2006	2007	2008
App web server	Licence USD 7.1m (EUR 5,835,936) Support USD 4.8m (EUR 3,945,422)	Licence USD 42m (EUR 32,166,653) Support USD 28.1m (EUR 21,521,023)	Licence USD 39m (EUR 26,505,389) Support USD 25.8m (EUR 17,534,321)
Portals	Licence USD 2.7m (EUR 3,241,262) Support USD 0.7m (EUR 575,374)	Licence USD 23m (EUR 17,615,077) Support USD 1.5m (EUR 3,446,475)	Licence USD 7.1m (EUR 14,572,121) Support USD 4.2m (EUR 2,922,387)
ESB BPMS	Licence USD 14.7m (EUR 12,082,853) Support USD 8.8m (EUR 7,233,273)	Licence USD 87.5m (EUR 67,090,449) Support USD 51.5m (EUR 39,519,031)	Licence USD 79.5m (EUR 54,098,337) Support USD 49.8m (EUR 33,845,317)

Source: Sun.
Note 1: There is no separate category for product sales.
Note 2: Some data is estimated.

26. *For application server software please clarify which are Sun's offerings products in this segment.*

Sun's application server is the Glassfish application server. Glassfish is an open source application server that is also the reference implementation of the Java EE specification. The Enterprise Server edition of Glassfish is the same product, but taken under a commercial license, rather than the GPL. Sun Glassfish Enterprise Server

enables customers to enjoy the benefits of the open source Glassfish product with an optional subscription that provides support, training credits, and limited indemnification.

See http://www.sun.com/software/products/appsrvr/index.xml for further details on this product.

27. *In paragraphs 122 and 123 you refer to application server software platforms (2.1 or the total market for Application Server middleware). Please explain what it is and how extensive it is. (explanation is given in Annex 2, page 12)*

IDC subdivides the Application Server Middleware category (for which market information is provided in section 7 of the Form CO) into the Application Server Software Platforms, Transaction Process Monitoring (TPM) and Other Application Server Middleware.

IDC provides the following information on Applications Server Software platforms *"Application server software platforms (ASSPs) are middleware that host application logic and provide common services that allow the application to operate effectively. Application servers provide a common programming model, such as JEE, NET, Spring, OSGi, or CORBA, that developers use to build their applications. By using an application server, developers gain access to extensions that include connectivity between the presentation layer, network, operating system, and database as well as with other application servers as part of a distributed system. To address this, the application server offers QoS for such things as transaction processing, reliability, throughput, scalability, security, and management. ASSPs are the foundation of modern applications, whether custom developed or packaged. They are also the foundation for many types of software infrastructure, such as a portal, content management system, or section bundle of ESB.*

ASSP revenue is not counted in the revenue model when it is embedded in other software. For example, when a portal is built on an application server but sold as a portal, the application server software portion is not counted in this market. However, when an ASSP is purchased separately from the application server required to make it run, the ASSP revenue is counted.

When ASSP is part of a multipurpose product, such as Microsoft Windows Server 2003, and we can determine what portion of the software is used as an ASSP, we will include that portion in ASSP revenue. The following list is representative of the vendors and products participating in this market.

- *IBM WebSphere Application Server*
- *Microsoft Windows Server IIS*
- *Oracle WebLogic Server*
- *Red Hat JBoss*
- *Sun Microsystems GlassFish"*

28. *Concerning Sun's GlassFish, please provide information on closeness of competition between Oracle's and Sun's offerings.*

As mentioned in paragraph 115 of the Form CO, the Parties do not consider Oracle to be a close competitor to Sun in application server offerings for the following reasons:

- First, Oracle's application server has a number of important features (including rolling upgrades, "on-line" patching and reconfiguration, dynamic systems tuning and resource pooling) that are integral to its architecture and are designed to provide very high levels of performance, scalability and reliability. Sun's application server Glassfish does not provide many of these features and/or provides rudimentary implementations only.

- Second, Oracle's application server provides services for transaction management, message queuing, connectivity to external resources and security (authentication and authorisation), which are significantly more advanced than Sun's application server Glassfish.

- Third, Oracle's application server provides several pieces of value-added functionality to improve performance and reliability, such as an in-memory application data grid (allowing applications to access large quantities of data directly in-memory).

- Fourth, as a result of these and other differences, Oracle's application server is typically deployed to run mission-critical business applications as the embedded application server that ISVs use within their applications and within the core transaction processing systems of a company. Sun's application server Glassfish, in contrast, is seen as a more lightweight solution that is suited for deployment for departmental applications.

The above factors indicate that Oracle's and Sun's application server products are not close competitors, either in a general sense or for any identifiable set of customers, as described in paragraph 154 of the Form CO. Instances of head-to-head competition between Oracle and Sun are much less frequent than instances in which Oracle and Sun compete with other vendors. Thus, out of 2,544 application server transactions in the EU, Sun was mentioned as a primary competitor in 17 transactions (0.67%) and as a primary or secondary competitor in 20 transactions (0.79%). Sun was neither a primary nor a secondary competitor in any of the key deals in this category. Oracle's two main competitors in this segment were IBM and Microsoft. IBM was a primary competitor in 14.11% of the transactions — over 20 times more often than Sun — while Microsoft was a primary competitor in 6.84% of the transactions. IBM and Microsoft were involved in 28.02% and 12.28% of the key deals respectively. Both IBM and Microsoft had a higher success rate than Sun when competing against Oracle, winning 35%–50% of the time compared to Sun's success rate of 20%–25%. In addition to IBM and Microsoft at least two additional competitors were specified as primary competitors more frequently than Sun: Red Hat and SAP.

Similar results apply to worldwide transactions. Sun was a primary competitor in 0.39% of the transactions, and a primary or secondary competitor in 0.48% of the transactions. IBM was a primary competitor in 14.53% of the transactions while Microsoft was a primary competitor in 8.37% of the transactions. Moreover, application servers, like other middleware components, are very often sold to customers not alone but as part of a wider bundle. A customer may be interested in buying a wide variety of different component combinations from a middleware

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vendor. This makes it even more unlikely that Oracle would compete head-to-head with Sun on deals that only relate to application servers.

29. *Please describe in detail how GlassFish is marketed under which kind of licence and provide an overview of who its customers are.*

Sun distributes its GlassFish line of middleware through direct sales channels, authorized resellers and OEMs. Sun does not have specific products or distribution patterns that are targeted towards specific customer segments. The GlassFish Communications product is more suited to telecommunications customers but there is no difference in the pattern of supply for this product. It is available for sale through the direct sales force, resellers and OEMs. GlassFish is available under the GPLv2 and CDDL open source licences (explained at paragraphs 205 and 206 of the second draft Form CO, provided on 24 July 2009).

30. *If Oracle decided to stop commercializing GlassFish, please explain whether an open source version of GlassFish would remain available on the market and whether it would it is supported by a community.*

The GlassFish open source license (CDDL and GPL) ensures the continued availability of the product and the ability of the community, at its election to continue to develop, maintain and support GlassFish even if Oracle elects to cease commercializing and supporting the product.

31. *In Section 6 ("The parties' offerings") you list the parties' middleware products grouped by application. Please fill in Section 7 separately for all groups you mention and in which both parties are active, including information on the turnover for EUR for sales, licences and support of each of the parties, the estimated market size, the estimated market shares of the parties and their main competitors, in particular add information for*

    a. *TPM*

    b. *Web server software*

    c. *Application server software (excluding TPM and web server software)*

    d. *Identity and access management software*

    e. *Application integration (excluding ESB)*

    f. *Event management software*

    g. *Adapters and connectors software*

    h. *Collaboration software*

    i. *Virtualization software*

As discussed in Section 7, the middleware segments that are affected markets are Application servers, Process Automation Middleware, Portals and ESB. The only other middleware segment in which there is a more than negligible overlap between Oracle and Sun (albeit significantly below the affected market level) is Identity and Access Management, on which the Parties present information below.

Please refer to the information below for the requested categories, according to IDC

a.   TPM

IDC refers to this segment as Transaction Processing Monitors. It is a subsegment of IDC's Application Servers Middleware category. The size of the Transaction Processing Monitors segment in 2007 was estimated at USD 1.8 billion (approximately EUR 1.3 billion) according to IDC. There is no overlap between the Parties as Sun does not have a TPM product.

b.   Web Server software

IDC does not report on this category. IDC includes Web Server software in the Application Server Middleware (ASM) segment, for which shares have been given in section 7 of the Form CO.

c.   Application server software excluding TPM and web server software

The requested information corresponds to IDC's Application Server Software Platforms (ASSP) segment, which is a sub-segment of IDC's Application Server Middleware category. Market shares for both ASSP and ASM have been provided in Section 7 of the Form CO.

d.   Identity and access management software

The size of the Identity and Access Management segment in 2007 was estimated at USD 3.2 billion (approximately EUR 2.3 billion) according to IDC. The market grew 8.9% in 2007. EMEA revenues accounted for approximately 17.4% of worldwide revenues.

According to IDC,[7] Sun's share, by revenue, was 1.2% in 2007. Oracle's share, by revenue, was 5.1% in 2007. The Parties' combined market share is well below the affected markets threshold. The major players in the market are IBM, CA, EMC and VeriSign. IBM's share, by revenue, was 12.1% in 2007. CA's share, by revenue was 10.3% in 2007. EMC's share, by revenue, was 7.2% in 2007. VeriSign's share, by revenue, was 7.1% in 2007.

e.   Application integration (excluding ESB)

IDC refers to this segment as Integration and Process Automation Middleware (IPAM). This includes Business-to-Business Middleware, Enterprise Service Bus and Connectivity Middleware (ESB), Event-Driven Middleware, Process Automation Middleware and Other Integration and Process Automation Middleware. IDC does not issue market share reports on the IPAM category. Market shares for ESB and Process Automation Middleware have been provided in Section 7 of the Form CO. The Event-Driven Middleware category is described in (f). below. There is no overlap between the Parties in any of the IPAM sub-categories except ESB and Process Automation Middleware (Business-to-Business Middleware and Other Integration and Process Automation Middleware). IDC does not report on Application integration excluding ESB.

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The total size of the IPAM segment, on which IDC reports, in 2007 was USD 7.96 billion (approximately EUR 5.8 billion).

f.   Event management software

IDC refers to this segment as Event-Driven Middleware and defines it as a subsection of Integration and Process Automation Middleware. The size of the Event-Driven Middleware segment in 2007 was estimated at USD 1.1 billion (approximately EUR 832 million) according to IDC.

There is a negligible overlap between Oracle and Sun in this category. Oracle has a share of 2.4%. Sun is not assigned a market share and is not a named vendor. The last named vendors in Event-Driven Middleware in 2007 have a market share of 0.2%. Thus, Sun's share in this category is below 0.1% and any overlap is trivial.

g.   Adapters and Connectors software

IDC includes Adapters and Connectors software within the Enterprise Service Bus and Connectivity Middleware (ESB). As noted in the response to ref. above, we have already provided the market shares for ESB in the Form CO and have no further information for Adapters and Connectors software.

h.   Collaboration software

IDC refers to this segment as Collaborative Applications. The size of the segment in 2007 was estimated by IDC at USD 6.3 billion (approximately EUR 4.6 billion).

There is a negligible overlap between Oracle and Sun in this category. Sun has a share of 2.6%. Oracle has a share of 0.07%. The main vendors in this category are IBM with a share of 18.2% and Microsoft with a share of 27.2%.

i.   Virtualisation software

IDC does not report on a software category precisely matching Virtualisation Software. It reports on 'Virtual User Interface Software' and 'Virtual Machine Software' within the System Infrastructure Software category. The combined size of these two IDC segments (which roughly correspond to the Commission's requested category) in 2007 was estimated at USD 2.1 billion (approximately EUR 1.7 billion) according to IDC. There is no or at most a negligible overlap between the Parties in this segment. Neither Party is assigned a share by IDC, thus

to the extent that the Parties have any revenues at all in this category, their share is significantly below 0.5% in any case.

32. *Please provide alongside the Form CO the complete databases used to evaluate the closeness of competition between Oracle and Sun for middleware (period: 1 May 2007 to 1 May 2009).*

Oracle will provide a response to this question as soon as possible after notification of the Form CO.

III. JAVA

Java language – Java Development Kit

33. *The Commission understands that the Java language is open source, can be freely used by any third party including for the development of commercial applications and that the Java development kit (the "JDK") from Sun is licensed under the GNU General Public License (GPL). Could you please confirm these elements?*

The Java language is not source code, so it is not accurate to describe the Java language as "open source." However, the Java language is widely and freely available to any third party, including for the development of commercial applications. The Java Development Kit (JDK) is available under the GNU General Public License.

34. *Please indicate whether Sun licenses a proprietary version of the JDK, and if yes whether such version of the JDK contains important additional features if compared with the Open JDK.*

Yes, Sun does license proprietary versions of the JDK. These do not contain important additional features if compared with the Open JDK, although at any given time, in light of the interactive nature of open source development, there may be features available under the Open JDK distribution and not under the proprietary versions. Over time, these differences are generally reconciled.

35. *Please indicate whether Sun, as the owner of JAVA, could impose restrictions on the use of the Java programming language or the use of the JDK.*

Sun cannot impose any such restrictions as it is encumbered by the JCP and the JSPA. Please refer to pages 4 to 14 of the White Paper on Java, submitted to the case team on July 29 and attached to the Form CO as **Annex 32**. The obligations to which Sun is under pursuant to the JCP and the JSPA apply equally to all the components of the Java platform.

36. *You submit in paragraph 168 of the second draft form CO that alternative languages to Java can be used (PHP, Ruby on Rails, Oracle, Python, PERL, for example). Could you please indicate to which extent these languages are used by Oracle.*

Oracle supports and uses these alternative languages in a variety of ways. For example:

- Oracle provides an extension to Oracle JDeveloper, Oracle's strategic Development Tool, that helps developers build applications using PHP and PERL.

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The PHP extension is in particular quite widely by developers developing applications.

- Oracle Fusion Middleware packages and tests implementation of popular PHP runtimes – mod_PHP – that is available as part of Oracle's Web Server which is in turn part of Oracle Fusion Middleware. This mod provides a runtime environment to allow applications built in PHP to be deployed with high performance and scalability.

- Oracle uses Python and a variant of Python called Jython widely in its Fusion Middleware Suite – all programs that are used by administrators to carry out administrative operations such as monitoring, configuration management, deployment and patching with Fusion Middleware.

- Oracle's Enterprise Manager technology which is used by systems administrators to manage its Database, Fusion Middleware, and Business Applications products has significant components of the product written using PERL.

- Oracle uses Groovy for scripting validation logic and business rules within Oracle Fusion Middleware and within Oracle's Fusion Applications products. "Business rules" are rules that a company uses to define internal processes for configuration of their application. For example, a company may need a business rule where "Purchase Orders > $500,000 need to be approved by a Chief Financial Officer" and that rule gets included in its financials applications to ensure that any purchase order above $500,000 has CFO approval before it is processed. These business rules are often expressed in Groovy.

- Oracle provides database drivers that are optimized to access the Oracle Database from these languages including PHP, Python, and PERL. These drivers provide better performance and scalability to applications that are written to access the Oracle Database from these languages.

37. *With regard to PHP, Ruby on Rails, Grails, Python and PERL, please indicate which companies or institutions own or sponsor them. In particular please explain the role of Oracle or Sun in this respect.*

PHP, Python and PERL are programming languages. Ruby on Rails and Grails are application frameworks for programming languages. No companies or institutions "own" them. Below is a brief description of certain sponsors affiliated with each web application framework. The roles of Oracle and Sun in this respect are limited to Sun's general sponsorship of the Python Software foundation.

- PHP: The PHP Group serves as the de facto standard for PHP as there is no formal specification. The Sponsors of the PHP group (www.php.net) include the following: easyDNS, Directi, pair Networks, Server Central, Hosted Solutions, Spry VPS Hosting, eZ Systems / HiT, OSU Open Source Lab, Yahoo! Inc., BinarySEC, NEXCESS.NET, Rackspace, and EUKhost.

- Ruby on Rails: Ruby on Rails, or RoR, is an open source web application framework for the Ruby programming language. Sponsors of Ruby on Rails

(www.rubyonrails.org) include the Ruby Row advertising network, reindex, and IBM.

- Grails Grails is an open source web application framework for the Groovy programming language, which is in turn based on Java. Sponsors of Grails (www.springsource.com) include Contegix, JIRA, structure 101'd, YourKit Java Profiler, Colver, SonarJ, AquaFold Aqua Data Studio.

- Python Python is a programming language based on an open community-based development model managed by the non-profit Python Software Foundation, which maintains the de facto standard definition of the language. The founding sponsors of the Python Software Foundation (www.python.org) are ActiveState and Zope Corporation. Sun Microsystems is a general sponsor. Other general sponsors include ActiveState, Advanced Simulation Technology, Inc. (ASTI), Array BioPharma, Inc., BizRate.com, Canonical, CCP Games, ePaySet Networks, I amMyDegree.com, Enthought, Inc., Google, Hill Pp, Inc., IronPort Systems, KNMP, Lucasfilm, Madison Is er LLC, Microsoft, OpenEye Scientific Software, Opsware Inc., O'Reilly & Associates Inc., PropertySold.ca, Stakk Holdings, Inc., Tabblo, ZeOmega, LLC and Zope Corporation.

- Perl Perl is a programming language. The *de facto* standard definition of Perl is maintained by the Perl Foundation (www.perl.org). The sponsors of the foundation include Booking.com, Stichting, NLnet, Best Practical Solutions LLC and Mozilla Foundation.

38. *Second draft from CO, paragraph 171 figure 3. Please explain what "coexistence of CICS IMS)" is. Please also explain what the Oracle application platform is, in which context it is used, whether it coexists with NET and/or Java extensions(?).*

CICS (Customer Information Control System) is a transaction server that runs primarily on IBM mainframe systems under z/OS and z/VSE. CICS is designed for rapid, high-volume online processing and is commonly used by financial institutions and insurance companies among others. IMS refers to IBM's Information Management System, a hierarchical database and information management system with extensive transaction processing capabilities. CICS and IMS are commonly deployed together on mainframes. The Oracle Application Platform refers to the Oracle Application Server, which is a comprehensive Java platform for developing, deploying, and integrating enterprise applications. The Oracle Application Server is an implementation of J2EE and thus embodies the standard not just coexists with it. As to NET, many enterprises use both Java and NET. In that sense the Oracle Application Server coexists with NET. However, applications developed for the NET platform do not run on Java or vice versa.

39. *Second draft from CO, paragraph 171 figure 3. Please indicate whether the proportion of companies that use NET has increased or decreased over the last 3 years. Similarly, please indicate whether the proportion of companies that use Java has increased or decreased over the last 3 years.*

The parties believe that the proportion of companies that use NET has increased over the last 3 years and that the proportion of companies that use Java has decreased

Based on the past success of .NET against Java, Info-Tech predicts that *".NET will continue to dominate. Microsoft currently has an incredible amount of market momentum. By taking leadership positions in both the Integrated Development Environment (IDE) market (with Visual Studio) and the portal market (with SharePoint), Microsoft is driving uptake of the .NET platform. Preference for .NET will peak by 2012 with 75% of firms expressing a preference for .NET"* (Info-Tech, p.9). The report is included in the CD-ROM of analyst reports accompanying these responses.

Java Runtime Environment

20. *Please clarify the differences between a Java application server and a Java Runtime environment. In particular, please explain whether Glassfish is a Java application server or an implementation of the JRE (or both).*

A Java application server is a complete software product that hosts and supports business applications in a multi-tier computing environment and is sold as such. Examples of application servers includes IBM's Websphere Application Server, Oracle's WebLogic Server, RedHat's JBoss application server, SAP's NetWeaver application server, and Apache Geronimo. Sun Glassfish is also a fully functional Java application server.

In general, the Java Runtime Environment (JRE) is a component of a Java platform consisting primarily of a Java Virtual Machine (JVM) and a set of standard class libraries that implement the Java API (Application Programming Interface) for the given platform. Ordinarily, the JRE is not a complete software product sold as such. Nor is the Java platform typically a complete product. Java SE and Java ME are typically used on general purpose computers and mobile and embedded devices, respectively.

It is a unique feature of the Java Enterprise Edition platform that the Reference Implementation of the Java EE specification -- Glassfish -- is a complete software product, namely an application server. This is because the Specification fully defines an application server. Thus Glassfish is both an application server and an implementation of the Java EE Specification.

21. *Please indicate whether middleware software companies systematically ship a JRE with the middleware they commercialize, or whether their customers already have a compatible JRE installed on their machines. In particular, please provide, for Oracle and Sun, or proportion of their sales of middleware software, the proportion of middleware software commercialized with a JRE, and the proportion of middleware software commercialized without a JRE.*

Oracle's policies for how different product families embed a JRE (rather than requiring a customer to have a compatible version of the JRE pre-installed) vary across its different product families, typically based on the business needs of each of these applications. For Oracle Fusion Middleware products, for example, Oracle ships a JRE with the middleware on the Linux and Windows operating systems, but on all other operating systems (e.g. Solaris, HP-UX, AIX, Truxl, Zlinux), Oracle asks the

customer to ensure that they already have a compatible JRE installed on their machines as a pre-requisite. Today, Oracle Fusion Middleware's revenues are about 55% when combining Linux and Windows Operating Systems and 45% on other Operating Systems.

Sun's policies on how different products bundle the JRE vs require the customer to have a compatible JRE installed vary. For the latest releases of currently shipping commercial middleware products, the JRE is generally not included and the customer is required to have a compatible JRE installed prior to product installation, the exception being GlassFish Enterprise Server with HADB, Sun Web Server and Sun Web Proxy Server. Where a JRE is included it is only done so for Solaris, Linux, and Windows platforms. Over 90% of the billings for these middleware products is from products that do not bundle the JRE.

Industry practice with respect to bundling the JRE with middleware products is mixed. Some (e.g., IBM) do include a JRE but others (e.g., JBoss) list installing the JRE as a pre-requisite. Typically, if a vendor has their own JRE they will bundle it or make it easily available or as part of the operating system if that is also an offering and if not, simply list the requirement and leave it to the customer to install the appropriate JRE prior to product installation. This is not universal, however, as some vendors that don't have their own will license or leverage redistribution rights of a third party JRE to include in their offering.

22. *Please indicate whether enterprise application software companies systematically ship a JRE with the software they commercialise, or whether their customers already have a compatible JRE installed on their machines. In particular, please provide, to Oracle, in preparation of its sales of enterprise application software, the proportion of software commercialised with a JRE, and the proportion of software commercialised without a JRE.*

Packaged software vendors who are distributing either Java EE application servers or enterprise applications built in Java need the binary executable version of the Java SE Virtual Machine, also called the Java Runtime Environment or JRE, to run their applications. Two scenarios are possible:

1. Scenario 1: The vendor product requires the JRE but the vendor does not package it. Vendors who offer a solution such as an enterprise application server or an enterprise application that is written 100% in Java often ask the customers to download the JRE on their own, rather than providing it with their software.

2. Scenario 2: The vendor's product requires the JRE and the vendor embeds or packages the JRE together with the vendor's product.

Only in the second scenario where the vendor by packaging or embedding the JRE redistributes the JRE does the vendor need a license from Sun to redistribute the JRE. The same would be true of a vendor packaging or embedding a non-Sun version of the JRE such as IBM's or HP's. The terms of the Sun JRE license can be found at: http://webstartfaq.com/2re1_3_0_license.txt

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The first scenario tends to be more common. Part of the reason for vendors relying more heavily on users' downloading of the JRE and not obtaining a license from Sun is that

- First, the JRE itself is specific to an operating system since it contains instructions that are specific to an operating system. As a result, if a vendor has a 100% pure Java solution which itself is portable across operating systems, then by "embedding" the JRE it would in turn have to build operating system specific distributions of its software.

- Second, additionally, packaged software vendors often choose to use a version of the Java Virtual Machine that is optimized on different operating systems to give their solutions optimal performance and scalability. For this purpose, they would use Sun's JRE on Solaris, Linux and Windows Operating Systems and IBM's version on AIX and HP's version on HP-UX. Again, if they embedded the JRE within their distributions they would in turn have to take a generic set of Java executables that was operating system agnostic and build operating system specific distributions of their software purely because of the way they packaged the JRE. Hence many vendors who have 100% pure Java implementations of various types of solutions tell their customers to download and install the JRE as a pre-requisite on their computers and do not package it.

By contrast, the second scenario covers vendors who although they sell a Java solution do not have a 100% pure Java solution. Specifically, for instance, their application may use an interface called Java Native Interface or JNI to call operating system interfaces. In this case, their application by its nature is both complex and operating system specific and has to have a set of binaries that is specific to a specific operating system. Moreover, interfaces such as JNI between Java and specific operating systems make specific "native" calls that change depending on the operating system. Hence, to both simplify the installation experience of their already complex application and to ensure that their application is combining the specific version of the JRE that is required by a specific operating system and the specific version of that operating system such vendors provide the JRE as part of their application.

28. *Concerning firms who develop their own implementation of the JRE, please indicate whether these firms generally develop their own implementations of both the Java Virtual Machines (JVMs) and the class libraries (JSL, JIT or JDK), or whether they develop their own implementation of only one of these elements. Give example of an implementation of the JVM and licensing of a class library from Sun? Please describe the situation of Oracle in this respect?*

An implementation of a Java Runtime Environment (JRE) is typically provided by vendors who build their own Java Virtual Machine. Typically, vendors focus on developing the Java Virtual Machine and its associated compiler technology to optimize the performance of the Java Virtual Machine for different processor architectures. They typically use the class libraries that are provided as part of the Java SE Reference Implementation. In Oracle's own implementation of Java technology both within the Oracle Database Server and external to the Oracle Database Server, Oracle has developed its own Java Virtual Machine technology but uses the class libraries provided as part of the Java SE reference implementation.

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44. You submit that Sun is the Spec Lead for the JSE, JEL, JML and JDMs. Please indicate whether Sun has obtained IP rights from other companies, members of the expert groups who have worked on the specifications. Please name the relevant companies.

Each member of an expert group is a signatory to the JSPA and as a result makes the limited IP grants specified in Section 4 of the JSPA, e.g. expert group member patent grants (with respect to their own contributions) can only flow through to compatible implementations. Members of the expert groups for JSR 244 (Java EE 5 platform specification), 270 (Java SE 6 platform specification), 218 (Connected Device Configuration 1.1), 139 (Connected Limited Device Configuration 1.1), 118 (Mobile Information Device Profile 2.0) and 248 (Mobile Service Architecture) are listed below. Please note that JME is a collection of technologies. Sun is the Specification Lead for the CDC and CLDC configurations (roughly comparable to virtual machines), but Aplix, IBM, Nokia, Palm and Siemens are leads for significant JMF JSRs.

JSR 244: Java EE 5 platform specification
Spec Lead: Sun Microsystems
Expert Group members: BEA, Borland, Capgemini, Fujitsu, Hewlett Packard, IBM, Interface, Novell, Oracle, OW 2, Pramati Technologies, Red Hat, SAP, SeeBeyond, Sybase, TmaxSoft, Trifork

JSR 270: Java SE 6 platform specification
Spec Lead: Sun Microsystems
Expert Group members: Apache Software Foundation, BEA, Capgemini, Google, Hewlett-Packard, IBM, Intel, Oracle, Red Hat, SAP, SAS, Thoughtworks
JSR 218: Connected Device Configuration (CDC) 1.1
Spec Lead: Sun Microsystems
Expert Group members: IBM, Intel, Matsushita, Nokia, NTT DoCoMo, Philips, Savaje Technologies, Sharp Corporation, Siemens, Sony Ericsson, Symbian, Vodafone

JSR 139: Connected Limited Device Configuration (CLDC) 1.1
Spec Lead: Sun Microsystems
Expert Group members: IBM, Intel, Matsushita, Nokia, NTT DoCoMo, Philips, Savaje Technologies, Sharp Corporation, Siemens, Sony Ericsson, Symbian, Vodafone

JSR 118, Mobile Information Device Profile 2.0
Spec Lead: Aplix
Expert Group members: AGFA Corporation, AromaSoft, Retrusted Inc., Distributed Systems Technology Centre (DSTC), elata PLC, Ericsson, Esmertec, Espial Group, France Telecom, Fujitsu, German Aerospace Center (DLR) Institute for Communications and Navigation, HiddenMind, Hitachi, In-Fusio SA, Logica Mobile Networks, Mitsubishi, MobileLee, Motorola, NEC, Nokia, NTT DoCoMo, Omnitel, One 2 One Personal Communications, Openwave Systems, Orange PCS, PalmSource, Research In Motion, Samsung, Sharp Corporation, Siemens, Smart Fusion, Softbank Mobile, Sun Microsystems, Symbian, Telefonica Moviles Espana, Vaultus, Veloxsoft, Vodafone, Zucotto Wire

Note: MIDP2 extends MIDP, for which the Spec Lead was Motorola.

JSR 248. Mobile Service Architecture
Spec Leads: Nokia, Vodafone
Expert Group Members: BEA Systems, BenQ Corporation, Cingular Wireless, Motorola, NTT DoCoMo, Orange France, Research In Motion, Samsung, Siemens, Sony Ericsson Mobile, Sprint, T-Mobile Austria, Vodafone
Note: JSR 248 defines a "stack" of JSRs that, together with JSR 118, MIDP 2 and JSR 139, CLDC 1.1, define the Java ME "platform". The component JSRs, and their Spec Leads, are:

- JSR 075: PDA Optional Packages for the J2ME Platform (PalmSource, IBM)
- JSR 082: Java APIs for Bluetooth (Aplix)
- JSR 120: Wireless Messaging API (Siemens)
- JSR 135: Mobile Media API (Nokia)
- JSR 172: J2ME Web Services Specification (Sun)
- JSR 177: Security and Trust Services API for J2ME (Sun)SR 211: Content Handler API (Sun)
- JSR 179: Location API for J2ME (Nokia)
- JSR 180: SIP API for J2ME (Nokia)
- JSR 184: Mobile 3D Graphics API for J2ME (Nokia)
- JSR 205: Wireless Messaging API 2.0 (Siemens)
- JSR 211: Content Handler API (Sun)
- JSR 226: Scalable 2D Vector Graphics API for J2ME (Nokia)
- JSR 234: Advanced Multimedia Supplements (Nokia)
- JSR 238: Mobile Internationalization API (Nokia)
- Note: The names of individual members of Expert Groups have been omitted from the lists

45. *Are the licenses for the JSE, JEE, JME and JVMs covered by the JSPA?*

   JSE, JEE, JME and JVMs are covered by the provisions of the JSPA which are described in detail in the White paper on Java attached as **Annex 32**

46. *You submit that Oracle has developed its own implementation of the JRE. Please provide an estimation of the costs incurred, and extract the cost for licensing IP rights from Sun*

   Oracle has two implementations of the JRE — one that runs within the Oracle Database Server itself and is tightly integrated with the Oracle Database and a second that is available for use by Oracle's Development Tools, Oracle Fusion Middleware, and some of Oracle's packaged Applications on certain operating systems and hardware platforms. The JRE environment that is part of the Oracle Database Server took 8 engineers 16 months to develop and requires 2 engineers to continually maintain. The non-Oracle database JRE environment took 5 engineers 11 months to initially develop and requires 4 engineers to continually maintain.

   As regards licensing IP Rights from Sun, it is very difficult to separate out the cost of this explicitly since Oracle also offers full fledged implementations of Java Virtual

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Machines and as a result have a Java SE TCK License from Sun. Therefore, it is difficult to extract the IP licensing rights just for the purposes of offering a JRE itself.

47. *You submit in paragraph 91 of the second draft form CO that Sun is not the Spec Lead of all the key technologies that make up the Java ME platform. Please explain this statement. In particular please explain what the implications with regard to the ability of Sun to licence or not the JME are.*

The Java ME platform consist of several JSRs, for which the Spec Lead is not always Sun. As with the other Java platforms several companies have contributed to various JSRs in many cases as specification leads.

Please refer to http://jcp.org/en/jsr/platform?listBy=1&listByType=platform, which includes a list of the JSRs that make up the Java ME platform together with details of the specification lead for each relevant JSR. As can be seen form the list several companies, including Nokia and Motorola, have been the specification leads on Java ME JSRs rather than Sun. As described in the White Paper on Java, attached as **Annex 32**, page 7 and following, "*each JCP member participating in the work of an Expert Group grants to the Spec Lead for the JSR various perpetual, fully-paid up, irrevocable licenses. These license grants pertain to the copyrights, trade secrets, and patents associated with the member's contributions to the specification. The Spec Lead thus becomes the "one-stop shop" licensor of the bundle of IP rights essential to implement and practice the JSR. In addition to its role as JSR IP licensor, the Spec Lead develops the Reference Implementation and the TCK. Should the Spec Lead require Expert Group member IP for the Reference Implementation and the TCK, that IP is also licensed to the Spec Lead for further sublicensing under the same terms.*

The JSPA governs how Java specifications must be licensed. Generally, the JSPA provides the terms on which the Spec Lead must license the essential IP to parties interested in creating (i) an implementation based on the Reference Implementation source code, or (ii) an Independent Implementation of a JSR. An Independent Implementation is "an implementation of a Specification that does not, except for code licensed pursuant to Section 5.F (sic), incorporate or otherwise make any use of the corresponding [Reference Implementation]." In other words, an implementation based on a Reference Implementation reuses parts of the Reference Implementation source code (e.g., a modification of the GlassFish application server) to which the licensee obtains all necessary rights, while the code of an Independent Implementation is written by the licensee from scratch based on the terms of the specification. Because both independent and Reference Implementation-based implementations must pass the compatibility test in order to receive the full IP bundle from the Spec Lead, the JSPA also provides the framework on which the Spec Lead must license the TCK.

The licensing provisions of the JSPA are described in more detail on pages 8 and following of the White Paper on Java.

Binary executable of the JRE

48. *You submit that companies may freely distribute the binary executable of the appropriate reference implementation of the JRE together with their software. Please*

realize that only the JRE implementation of the JSL is concerned (that including JVM and the library JSL)

Sun distributes for no fee, and with no fee redistribution rights, a binary version of Sun's implementation of the JRE. We are not sure we properly understand the second sentence. Sun distributes for no fee binary implementations of many Java specifications, not just the JRE.

29. *Please explain whether the free binary version of the JRE presents limitations if compared with the JRE licensed under commercial terms by Sun.*

Sun licenses the JRE as source code to licensees who have need to modify the code; this group is what we presume you are referring to as "licensees under commercial terms." Sun also licenses free binary versions of the JRE, which may be used for commercial purposes, but the principal difference between these two mechanisms is the right to modify; that is, no rights are granted to modify the binary versions.

50. *Please also explain why some software firms have an interest to acquire a commercial license when there is an implementation of the JSE available for free (hence it shows that Sun generated EUR 45 millions in revenue in 200x from the JSE).*

Some software firms need or desire access to the JSE source code either to port to a particular OS CPU combination for which Sun does not have a free binary version, or to differentiate their offering from those of Sun or other firms. Please note that the vast majority of the EUR 45 million figure cited in **Annex 18** refers to activities unrelated to the licensing of JSE (e.g., the Google test bar agreement)

51. *Please indicate whether there is a binary executable version of the JRE for all machines.*

The scope of this question is somewhat unclear. If the question is whether there is a JRE available for all major operating systems the answer is yes. There is a JRE available (either from Sun or third parties that have created JRE implementations) for all common operating systems including: Solaris SPARC, Solaris x86, Sun Java Desktop System, Red Hat Linux, SUSE Linux, Windows 98, Windows ME, Windows XP, Windows Vista, Windows 2003, Windows 2000, HP-UX, OpenVMS, True64 and Reliant (Tandem) UNIX platforms, AIX, MVS, OS 400, Pocket PC, z/OS, Mac OS, and embedded OS such as ARM7, ARM9, AVR, AVR32, PPC, and MIPS

52. *With regard to Oracle, please indicate which proportion (in terms of revenue) of its middleware software is used in combination with the fee binary version of the JRE. Please also indicate which proportion of its enterprise application software is used in combination with the fee binary version of the JRE.*

This information is not available to Oracle nor can it be collected, as Oracle does not track the version of the JRE used in conjunction with Oracle middleware. As noted in the response to questions 40 and 41 above, in many cases the middleware or enterprise application's vendor does not "package" or embed the JRE into its product, but rather it is the customer that downloads the JRE it needs.

53. *You submit in paragraph 194 (iii) that binary versions of the JRE and the JDK are available from Sun without charge. Please indicate whether Sun could unilaterally*

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decide to stop this and make binary versions of the JRE and JDK unavailable, or available for a fee.

Java is a development environment that competes for mind- and market-share with other free, widely distributed alternatives such as .Net, Flash, scripting languages such as Pearl and Ruby, and other technologies. Charging a fee for the binary JRE would reduce Java's competitiveness against these alternative technologies. Moreover, Sun's commercial and open source licensees would, as they already do, be readily able to offer free versions of the JRE.

Users of the JRE

54. Out of the middleware software firms who use JREs, please provide an example of the proportion of firms who (i) use a free binary executable version of the JRE for general computing use, (ii) license a JRE from Sun and use it without any modifications, (iii) license a JRE from Sun and bring modifications to the RI, or create their own implementation of the JRE and then license the relevant TCKs from Sun, and (v) others (to specify). If relevant please distinguish between JSE, JEE, and JME. Please describe what the position of Oracle is.

The question is confusing because Java software programs in general "use JREs" even if they do not contain an embedded JRE. (see response to Question 42). This is true of many sorts of Java middleware. The requested information concerning the proportion of firms who use a free binary executable version of the JRE or something else is not available to Oracle nor can it be collected. We do believe that almost all the application server providers with whom Oracle competes (see response to Question 75) license Java source code from Sun, and also obtain the free binary executable versions of the JRE available from Sun. The same is true of Oracle itself.

55. Out of the enterprise application software firms who use JREs, please provide an estimate of the proportion of firms who (i) use a free binary executable version of the JRE for general computing use, (ii) license a JRE from Sun and use it without any modifications, (iii) license a JRE from Sun and bring modifications to the RI, or create their own implementation of the JRE and then license the relevant TCKs from Sun, and (v) others (to specify). If relevant please distinguish between JSE, JEE, and JME. Please describe what the position of Oracle is.

The same principles apply in response to this question as to the answer to Question 54. However, very few, if any, Enterprise Application Software firms that are not also Java technology providers or Middleware technology providers fall into categories (iii), (iv) or (v). Virtually all of them fall into either category (i) or (ii). The only reason they would license a JRE from Sun is if they were planning to embed the JRE within their own business applications for distribution.

Java Community Process & JSPA

56. Please indicate whether firms who do not belong to the JCP automatically benefit from the FRAND terms guaranteed under the JSPA to JCP members.

The obligations of the Spec Lead to license the RI and TCK on FRAND terms under Section 5 F of the JSPA extend to all licensees and not just to JCP members.

57. For the years 2007, 2008 and 2009 (inclusive) please indicate in which decisions of the JCP Executive Committee, the position of Sun has been in minority, if any.

I.A.1. 1. JSR Votes

- JSR 291, Dynamic Component Support for Java SE - Public Review Ballot (January 2007) Sun votes No. The ballot passed.

- JSR 313 Java Platform, Enterprise Edition 6 (Java EE 6) Specification – JSR Review Ballot (April 2007). Sun votes Yes. The ballot failed.

- JSR 291 Dynamic Component Support for Java SE - Final Approval Ballot (May 2007) Sun voted No. The ballot passed.

- JSR 280 XML API for Java ME - Final Approval Ballot (July 2007) Sun voted Yes. The ballot failed. (During the Final Approval Reconsideration Ballot Sun voted with the majority and the ballot passed.)

- JSR 225 XQuery API for Java (XQJ) - Final Approval Ballot (March 2008) Sun abstained. The ballot passed.

- JSR 324 On Screen MIDlet API for Java ME - JSR Review Ballot (April 2008). Sun abstained. The ballot failed.

I.A.2. 2. EC Meeting Votes

Sun was in a minority (either abstaining or voting against) in the following Executive Committee meeting votes, all of which were passed.

- ***January 2007*** **Motion** "Add text to the JSPA draft to require that One publicly viewable TCK license must be available (TCK Default License) TCK Default License must be offered promptly upon request and TCK Default License cannot prevent creation or distribution of compatible implementations." **Results** It's not clear whether this vote was ever formally taken (There are no minutes for this meeting since Onno Kluyt – then Chair of the JCP – laptop, which contained the meeting notes, was stolen shortly afterwards The possibility of a vote was definitely discussed at the January meeting in response to Sun's rejection during the December 2006 EC meeting of proposals from Intel that the JSPA be modified along the lines discussed in the motion above)

- ***September 2007*** **Motion** "*TCK licenses must not be used to discriminate against or restrict compatible implementations of Java specifications by including field of use restrictions on the tested implementations or otherwise. Licenses containing such limitations do not meet the requirements of the JSPA, the agreement under which the JCP operates, and violate the expectations of the Java community that JCP specs can be openly implemented.*" **Results**

The motion was voted on by both the ME and the SEEF Executive Committees. The motion was approved. Sun voted against.

- *December 2007* **Motion 1** "It is the sense of the Executive Committee that the JCP become an open independent vendor-neutral Standards Organization where all members participate on a level playing field with the following characteristics: (a) members fund development and management expenses; (b) a legal entity with by-laws, governing body, membership, etc.; (c) a new, simplified IPR Policy that permits the broadest number of implementations and strategic compatibility requirements; (d) dedicated to promoting the Java programming model. Furthermore, the EC shall put a plan in place to make such transition as soon as practical with minimal disruption to the Java Community." **Results** The motion was voted on by both the ME and the SEEE Executive Committees. The motion was approved. Sun abstained.

- *December 2007* **Motion 2** "The SEEE EC requests Sun to submit a Java SE JSR with the following characteristics: (a) EC members will share costs by contributing to the TCK and RI submitted under common licensing terms that will allow any implementer to use them; (b) accompanied by public spec, tck, ri licenses at JSR initiation that licenses do not contain field of use restrictions on spec implementations; (c) the JSR is operated by the Spec Lead under democratic principles (e.g. Java SE4). Furthermore, from the time of submission, TCK licenses for Java SE5 and later will be offered without field of use restrictions on spec implementations enabling the TCK to be used by organizations including Apache." **Results** the motion was voted on by SEEE Executive Committee. The motion was approved. Sun abstained.

- *April 2009* **Motion** "TCK licenses must not be used to discriminate against or restrict compatible implementations of Java specifications by including field of use restrictions on the tested implementations or otherwise. Licenses containing such limitations do not meet the requirements of the JSPA, the agreement under which the JCP operates, and violate the expectations of the Java community that JCP specs can be openly implemented." **Results** The motion was voted on by both the ME and the SEEE Executive Committees. The motion was approved. Sun voted against.

58. In response to the second draft term (O) that in the revised JCP procedure said In case a Java Specification Request (JSR) is accepted, the Spec Lead must provide the Executive Committee with an advance notice of the business terms on which a TCK license will be granted. With regard to this procedure please provide the following information: SEX

    a. Does this procedure cover all JSRs, including those related to the JSE, the JEE, the JME, or the JME?

    Yes

    b. Does this procedure also apply to the business terms on which the Reference Implementation (RI) will be licensed?

    Yes

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c. Does the Executive Committee vote on all the terms of the licence (price, technical aspects, Field of use restrictions, etc.), or does the Executive Committee limits its assessment to some aspects of the licence only (technical aspects for instance)?

Under the recent change to the JCP process (v. 2.7) all of these terms are to be made available to the Executive Committee members. However, the members vote on each JSR as a whole and there are not separate votes broken apart by technical merit, etc. It is up to each member to determine what factors to consider in determining their vote. The practical import of the new JCP process is that a Spec Lead could endanger passage of an entire JSR if it proposed unreasonable business terms.

59. The JCP2 Process Document (http://jcp.org/en/procedures/jcp2) states that new platform edition specifications will not substantially duplicate existing platform editions or profile. Does this imply that no competitor of Sun is likely to develop a new version of the JSE, JEE or JME within the JCP?

Any JCP member, whether a competitor to Sun or not, can initiate a request to develop new versions of J2SE, J2EE, and J2ME pursuant to Section 1.1.1 of the process document. That said, as provided by Section 1.1.2, "[i]n order to guard against fragmentation, new Platform Edition Specifications will not substantially duplicate existing Platform Editions or Profiles." The rationale for this provision lies in the nature of Java as an interoperability platform. The benefit for application developers who write programs for, say, J2EE is that their applications will run on any J2EE-compliant platform. That is the essence of "write once, run anywhere." If there was a proliferation of overlapping and only partially compatible J2EE platforms, the interoperability and standardization benefits for the downstream developers would be significantly reduced, because they would have to create multiple versions of their programs. Consequently, as a practical matter, it is unlikely that anyone within the JCP would find the requisite community support to create new, overlapping specifications. Of course, this is not to say that revisions (i.e., new versions) of J2SE, J2EE, and J2ME would not be developed within the JCP. In fact, that is commonplace. The vehicle for new versions and revisions to the J2SE, J2EE, and J2ME platforms is the Umbrella Java Specification Request, as defined in Section 1.1 of the process document.

60. Paragraph 15 of the Draft Form CO: Is there any evidence of the claim that Oracle and "others" have made such claims in the past (i.e. more inclusive governance and broader participation)? Were these public claims?

On multiple occasions in the last 12 months, at meetings of the JCP and JCP Executive Committees, Oracle has argued for more inclusive JCP governance and broader participation, including by introducing a resolution to that effect with the JCP executive committee and by making a clear statement in May 2009 to the Java Community Process meeting (hosted by IBM at their Hursley, UK facility). Meeting participants - stakeholders who are all leaders in the Java community - were receptive to and supportive of both the proposed resolutions and shared remarks. Summaries of these proceedings are generally available to JCP members, but may not be available to the general public. The statement that Oracle made at the Hurley, UK executive committee meeting was as follows:

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Oracle and the Java Community

1. Oracle is committed to Java and to maintaining a broad based, healthy, and growing Java community including stakeholders of all sizes, business models and development methodologies.

2. Oracle has a long history of supporting Open Standards and is an active contributor to and supporter of Open Source projects across the software spectrum.

3. Java benefits by being available to the widest possible audience. Oracle (like everyone in the Java community) benefits from an open broad-based Java ecosystem.

- *Both Open Standards and Open Source lower barriers to entry, adoption and use.*

- *The Java ecosystem is advanced by contributions from organisations outside of the JCP (e.g. Eclipse, Apache, OSGi, OASIS).*

4. Oracle fully recognizes the benefits of a diverse Java ecosystem and is committed to enhancing everyone's shared equity in the Java ecosystem.

5. The JCP and the Executive Committee should serve the interests of the entire Java ecosystem. The best indicators of the health of the Java community are: the number of new developers being attracted to the Java community, the number of developers running new Java products, enterprises selecting software based on Java technology, and users solutions powered by Java."

61. *Paragraph 54, 2nd bullet point. Please explain this argument as it is not clear.*

Given the extraordinary nature of a vote to over-rule the technical judgment of the Specification Lead, it was agreed that in these circumstances a super-majority would be appropriate. There have been no instances in the history of the JCP where an override vote has been taken.

Licensing agreements

62. *Please indicate the termination date of the licensing agreements that Sun has with Hewlett Packard, Sprint, SAP and Red Hat with regard to J.H.L.*

Please refer to **Annex 38** of the Form CO.

63. *Paragraph 19 (penultimate bullet point) indicates that IBM, Google and others have already produced forked versions of Java specifications. This claim probably relates to Google's Android and the reference to IBM "and others" relates to the Harmony project. Is this correct?*

The referenced statement could perhaps be more precise. We regard "forking" to occur when developers take source code and alter it through independent development, creating a distinct and differentiated piece of software. Google's Android is fairly regarded as a "fork" of Java ME; in that it is overwhelmingly based on Java ME code, yet alters that code in a way that fractures the Java ME standard. Microsoft once forked Java by making a version that was ostensibly optimized for Windows environments but in reality undermined the interoperability objectives that define Java. IBM has previously advocated for Sun to fully open source Java so that it could be forked, but Sun has always declined to do so on account of the enormous potential for fragmentation.

The Apache Harmony is not a fork as such, because it is an independent implementation of the Java SE Specification intended to perform exactly like the Reference Implementation. It is more of a clone of Java SE than a fork. That said, Harmony – which is heavily backed by IBM – would be a *de facto* fork of the Java ME Specification, because the license by which Apache would distribute Harmony would not be restricted, as Java SE licenses are, to use on general purpose computers. Harmony could therefore be used in place of Java ME on mobile and embedded devices. It therefore has the same platform fragmentation potential as a true fork. Therefore, in all events, yes, the IBM reference was related to Harmony.

64. *Several times in the Draft Form CU, the point is made that forked versions of Java specifications have been either prevented or developed while at the same time, it is claimed that Oracle has a lot to lose from Java forking. Why would a company like IBM promote Java's forking (through Harmony)? Isn't that – contrary to Oracle – contrary to IBM's business interest that also relies on the Java Platform being successful? What differentiates IBM from Oracle in this respect?*

We doubt that IBM wants to fracture Java in the way that a true fork would. However, we believe that IBM supports Apache Harmony, and in particular its desire to get a license that would allow Apache to distribute Harmony through an open source license, simply because that would relieve IBM from the burden to pay several million Euros per year to Sun (or Oracle, after the acquisition) for Java platform licenses. Simply put, IBM wants Java to be open sourced because it would then be available for free.

What apparently differentiates Oracle from IBM ("apparently" since we have no special insight into IBM's motives), is that Oracle does not support and has never supported open sourcing Java completely. The reason is that Oracle does not believe the risk of fragmentation that open sourcing Java would present is worth the economic benefits that might result from open sourcing. It is well-understood in the software industry that forking has a potential to damage industry support for the original root project. This was the thesis of the antitrust prosecutions of Microsoft ten years ago for introducing the Microsoft Java Virtual Machine, the purpose of which according to the United States Department of Justice was *"to impede the development of software ... that cross-platform compilation to packages like Netscape Navigator and Java might create and use to challenge Microsoft's monopoly."* Oracle does not want to take that risk. Oracle believes Java can reach more of its potential as a development platform and

See Memorandum of the United States in Support of Measures for Preliminary Injunction, United States v. Microsoft Corp. (N.D.C.), http://www.usdoj.gov/atr/cases/f170......f162.htm

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command broader industry adoption with a sponsor like Sun or Oracle working through a community process like the JCP. IBM, apparently, would take a chance on another approach.

65. *Paragraph 104 posit h describes a four licensing mechanisms for Java, please indicate the reasons why licensees would choose one type compared with another type as well as examples of companies that are currently under licenses for each of the four types.*

(i) For "**Commercial licensees**", the typical licensee would seek access to the Spec Lead's reference implementation as a starting point from which to modify the code to address particular porting, optimization, differentiation and integration solutions. The extra fees, if any, for obtaining the Spec Lead's source code under such a license would be balanced against the expense and uncertainty of implementing from scratch and then maintaining that code base. Examples of commercial licensees include Oracle, IBM, SAP and Nokia.

(ii) For "**Open Source licensees**", the typical licensee would value both the benefits of an open, transparent, interactive development community and also the freedoms available to users under the GPL license. Sun has no way of tracking who has downloaded the OpenJDK code via the GPL license under which Sun makes that available. OpenJDK licensees are not limited to distributing compatible implementations and therefore their motivation to license the TCK may vary.

(iii) For "**Independent Implementers**", the typical licensee would, like "commercial licensees", have distinctive porting, optimization, differentiation or integrative needs for their implementation but, unlike "commercial licensees", would conclude that developing their own implementation rather than relying on the Spec Lead's **RI** as a starting point is a preferable strategy. RIM, ObjectWeb and Apache are examples of Independent Implementers.

(iv) For "**binary versions of the JRE**", the typical licensee is anyone that needs an engine on which to deploy a Java application and has no strong need to differentiate their application based on the behaviour of the underlying runtime. The typical binary JDK licensee is a developer that needs access to a limited but useful set of tools for creating Java applications (e.g. compilers and debuggers), but does not need the full-featured set of tools available from a commercial tool provider or open source options such as Eclipse and NetBeans.

66. *You submit in Annex 18 of the draft from CO the total revenues at Sun in Euros stemming from licensing of Java in 2007 and 2008. Please also split these revenues into (i) commercial licenses of JRE (Sun's implementation of the JRE licensed to customers), (ii) licensing of TCK for companies who develop their own implementations of the JRE, and (iii) others (to specify).*

Note that Sun is not in a position to measure the business in the way requested but have provided additional details beyond what was included in **Annex 18**. We are interpreting JRE to mean "revenue attributable to commercial license agreements for Sun's implementation of the technologies (royalties). Sun does not track standalone TCK licenses for customers developing their own implementations of the JRE but estimate that the amount is close to $0 as most of the SA TCK licensees are not-for-profit organizations. Please refer to **Annex 39** of the Form CO.

67. *You submit in Annex 18 of the data from CO that Sun earned EUR 19 millions in 2008 from Java card. Please explain what Java card is and who are the users.*

The Java Card platform allows for Java-based applications to run on the smallest resource-constrained hardware such as smart cards and SIMs within mobile handsets. Security, manageability and multi-application support are all core components within the Java Card platform. Sun Microsystems does not manufacture Java Cards, but manages the Java Card specification and creates test suites to prevent fragmentation of this standard platform. Sun is paid license fees granting others the right to distribute the Java Card platform on Smart Cards and SIMs. The Java Card Platform has been deployed in SIM Cards (Telco industry), ID Access Cards (Gov't ID, ePassport, Citizen ID, Corporate ID), Finance Banking Cards (Visa, EMV, ePurse) and Subscriber TV (Smart Cards for TV set-top boxes). Java Card licensees comprise chip manufactures, smart card manufactures and software developers, which then sell the Java Card certified smart cards to entities such as telco operators, cable TV operators, Government entities, Corporate entities and Banks.

68. *For the ten largest Java licensees from Sun, please provide the following information (i) Sun's revenues 2007, 2008 and 2009 (January-June); (ii) the nature of the IP rights licensed to the licensee (commercial license, TCK only, etc.); and (iii) the date of termination of the contract.*

Please refer to **Annex 40** of the Form CO which contains the information requested under 68 (i) and **Annex 38** which contains information requested under 68 (ii) and (iii).

69. *Please confirm that all Java licenses from Sun are worldwide and do not contain geographical restrictions.*

Sun's regular practice is to enter into Java licenses that are worldwide and without geographic restrictions. Sun has not identified to date any licenses that contain any geographic restrictions.

70. *Please explain the conflict between Sun and Google with regard to Google's Android.*

Sun believes that the Dalvik virtual machine plus class libraries, which together constitute the Android runtime environment, are an unauthorized derivative work of Java SE.

71. *You submit that one cannot take a license to Java SE for use in a mobile device. Please provide an example of a license to Java SE, and indicate which clause of the license agreement prohibits the use in a mobile device.*

As explained in the White Paper on Java submitted to the case team on July 20 and attached to the Form CO as **Annex 32**, it is Sun's general policy that a license to distribute Java SE for use in mobile computing environments shall be subject to a different fee structure than for use in general purpose computing. Attached at **Annex 37** of the Form CO is a copy of a Java Binary Code License that authorizes distribution with Programs for General Purpose Computing.

72. *General computing provision. Please indicate where these conditions can be found.*

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In reference to **Annex 37**, note first the License Grant in Paragraph 2 *"To reproduce and use internally Software complete and unmodified for the sole purpose of creating Programs."* Next note the Definitions in Paragraph 1. The definition of "Programs" is: *"(a) Java technology applets and applications intended to run on the Java Platform Standard Edition ("Java SE") platform on Java-enabled General Purpose Desktop Computers and Servers, and (b) JavaFX technology applications intended to run on the JavaFX Runtime on JavaFX-enabled General Purpose Desktop Computers and Servers."* Finally, the definition of "General Purpose Desktop Computers and Servers" is *"Computers, including desktop and laptop computers, or servers, used for general computing functions under end user control such as but not specifically limited to email, general purpose Internet browsing, and office suite productivity tools."*

7.3. *JSPA compatibility provisions. Please indicate where these conditions can be found.*

Compatibility provisions are provided for in JSPA Sections 4.A.I(e), 4.A.II(a), 4.D, 5.B, 5.F, 5.F.II.(a-c), 5.F.IV, 5.F.VI, 5.G and 6.A(b)

74. *You submit in paragraph 194 of the second draft Form CO that Microsoft license to distribute a binary version of the JRE for use on Windows has terminated as of June 30, 2009. Please explain how this is compatible with your submission that Sun makes available a binary executable version of JRE and JDK without charge.*

Pursuant to the terms of a settlement of litigation between Sun and Microsoft in 2004, Microsoft was authorized by Sun to develop and distribute Microsoft's own implementation of the JRE. By the terms of the agreement, this authorization expired on June 30, 2009. Microsoft could in its discretion download and distribute without charge Sun's implementation of the JRE for Windows via the standardized license terms described elsewhere in this response.

75. *Paragraph 194, footnote 49 refers to Annex 25 which lists 9 companies that are currently Java licensees in competition with Oracle. Please provide a more detailed answer that also indicates:*

(i) in which market(s) these competitors compete with Oracle.

See **Annex 25** of the Form CO, which has been amended to include the requested information.

(ii) list the Java licenses that these licensees have from Sun.

Please see **Annex 38**

(iii) the total licensing revenues to the last 3 years for each of these licensees and

Please see **Annex 40**

(iv) the expiry dates of each license.

Please see **Annex 38**. Sun notes that Microsoft should be removed from the list of 9 competitors since Sun's revenues from Microsoft relate to a toolbar deal and not to any licensing of Java technologies, services, etc.

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76. *Paragraph 164, footnote 43 refers to Annex 25 which lists 9 companies that are currently Java licensees in competition with Oracle. Microsoft is listed as a Java licensee even though the Form CO mentions that Sun has no contractual relationship with Microsoft for Java technology with the exception of 2 patents. Are these caveats the reason why Microsoft is listed in Annex 25?*

Please refer to the answer to question 75(a) above.

77. *Paragraph 171 and Oracle's incentives: The incentives analysis seems to suggest that any attempt by Oracle to affect Java would lead to a complete loss of revenues from its middleware and applications software. This seems rather colourable and unrealistic. Assuming that Oracle had the ability to affect Java licensing conditions to its downstream competitors, the calculations would incorporate lost revenues on Java licenses (if refused to license were possible or if the license was degraded), gained sales to middleware and IAS (gained from competition with degraded products) and then in the longer run the possible costs to Oracle of the degradation of Java. Please discuss these costs/benefits of refusing to license or degrading license terms to competitors (if this was to assume that it were possible).*

As discussed in the White Paper on Java submitted to the case team on July 20 and attached to the Form CO as **Annex 32**, Oracle lacks the ability to use Java as a means for downstream foreclosure. Neither Oracle nor Sun can "take Java away" from their customers or competitors. Thus, emphatically, the "refusal to license" Java on which the question is based is a counterfactual that has no application in the real world.

Turning to incentives, Oracle derives approximately $10 billion from Fusion Middleware and Oracle Applications. The parties' response in Paragraph 172 (not 171) does not suggest that "any attempt by Oracle to affect Java" for example through participation in the JCP, "would lead to a complete loss of revenues from its middleware and applications software." Rather, the response attempts to place an upper bound on the potential loss to Oracle if developers abandoned the Java platform. The "possible costs to Oracle of the degradation of Java" are thus all costs associated with losing the foundation on which Oracle's middleware and applications business has been built.

If, in a counterfactual world in which Oracle was the sole licensor to all Java technology, Oracle would discontinue Java licensing, it would suffer the loss of all associated Java licensing revenues. The parties reject the assumption contained in the question that hypothetical refusals to license Java would result in "gained sales to middleware and IAS". Given that the Java platform is based on open standards, and that no future licensing scheme can affect that status quo, it is conceptually impossible to capture and "lock in" Java customers by changing Java licenses going forward. Thus downstream customers would likely shift their new license purchases away from a suddenly closed Java platform, not turn to Oracle to purchase more.

Consequently, even in the counterfactual world envisioned by the question, Oracle has no economic incentives to refuse or degrade Java licenses. The losses in downstream sales of middleware and applications and of licensing revenue in both the short run (e.g., customers deferring purchases) and the long run (e.g., customers and developers abandoning the suddenly closed Oracle platform) would dwarf any hypothetical gains

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from customers that remain "committed" to Oracle products. Thus, the costs of refusing to license or degrade licensing terms to competitors would far outweigh any possible gains.

78. *You submit that Sun has for many years relied on a field of use restrictions to draw boundaries (with between platforms (J2SE vs J2ME) and within platforms (J2SE for general computing vs J2SE for embedded use). Please provide examples of licences where such field of use restrictions have been used.*

Java SE TCK licenses have long required payments to Sun for "embedded" uses. Sun has also offered free licenses for Java SE so long as the licensee agreed to limit usage to general purpose computing. At the same time, Java TCK licenses include compatibility requirements that ensure, for example, that developers writing applications using Java SE are not creating products that are covered by the technically distinct Java ME APIs and protocols for mobile and embedded applications.

Attached at **Annex 41** of the Form CO is a copy of Hitachi's Java SE SE Embedded SCSL attachment D. Details of the field of use conditions are set out in Section 7 of the attached license.

Apache Harmony

79. *You submit that Sun can incorporate field of use provisions in Java licenses to allow Sun to satisfy its obligations under the JSPA to ensure uniformity of the Java implementation for each distinct Java environment (paragraph 164 of second draft form CO). Please indicate which clause in the JSPA sets such obligations.*

The provisions of the JSPA that impose the said obligations on Sun are the General Computing provision and the JSPA Compatibility provisions. Please refer to the responses to questions 71 and 72.

80. *You submit at Annex 18 of the second draft form CO that Sun generated $4.11-42 millions at or above at 2008 from the J2I. Please explain to which extent this revenue will be affected by the release of the Apache Harmony project.*

There is no feasible way to quantify the extent to which Sun's licensing revenue would decline. Conceptually, however, it is difficult to understand why anyone would pay Sun for a Java SE TCK license if an Apache Harmony license were available. As we have stated elsewhere, granting Harmony the unrestricted license it seeks would lead to what can only be viewed as a licensing intelligence test. Would you prefer a free license from Apache or a paid license from Sun that gives you nothing more in terms of IP rights? The answer is obvious. Java SE licensees would turn to Harmony with no ability for Sun to recover any of the lost license revenues from Apache via a TCK license, on account of Apache's non-profit status.

81. *Please describe the Apache Geronimo project implementation of a J2EE by Apache, the licences granted by Sun to Apache with regard to the project, and whether any restrictions if field of use or others apply to these licences.*

Apache describes the goal of the Geronimo project as producing a "*server runtime framework that pulls together the best Open Source alternatives to create runtime*

that meet the needs of developers and system administrators. Our most popular distribution is a fully certified Java EE 5 application server runtime." Sun licensed the Java EE 5 TCK to Apache on a standalone basis in September 2006. Exhibit A-2 to the agreement includes the following Field of use condition: "II. Field(s) of Use: a single application server, known as Geronimo Application Server.

<u>*Certain related markets*</u>

82. *Enterprise application software. Please provide a description of the enterprise application software market, including in particular the market shares of Oracle and its ideal competitors, as well as the total value of the market. Please also distinguish the relevant submarkets in the enterprise application software market.*

Enterprise Applications Software ("EAS")

Market size. The total worldwide revenue for EAS in 2007 amounted to USD 87.6 billion (approximately EUR 64.9 billion) according to IDC, with a growth rate in 2007 of 6%.

Vendor shares. The table below shows the shares (by revenue) of Oracle and other players on a worldwide basis for EAS for 2006 and 2007 as estimated by IDC.

See http://geronimo.apache.org.

IDC, Worldwide Enterprise Applications 2008-2012 Forecast Update and 2007 Vendor Shares, Tab Data.

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EAS shares by vendor 2006-2007

EAS share (%) Vendors		IDC	
		2006	2007
1	SAP	9.6	10.8
2	Oracle	6.4	7.1
3	Microsoft	2.4	2.5
4	Sage Group	2.3	2.5
5	Infor	2.0	2.0
6	Siemens	2.0	2.0
7	Others	75.3	73.1
Total		100	100

Source: IDC, *Worldwide Enterprise Applications 2008-2012 Forecast Update and 2007 Vendor Shares*, July 2008.

As the table above illustrates, the EAS market is a highly fragmented one with more than 70% of the market accounted for by vendors other than the top-5 vendors. SAP is the clear leader in the EAS market and earns almost 1.5 times the revenues of Oracle. There is no overlap between Sun and Oracle in EAS.

As the Commission found in *Oracle/Peoplesoft* and confirmed in *Oracle/Siebel* the EAS market may be subdivided into three main segments, or "pillars". Thus, the Commission stated in *Oracle/Peoplesoft* that: *"The industry, in particular industry analysts, generally distinguishes various categories of EAS, grouping EAS into categories having functionality with broadly similar purposes. Oracle, for example, identifies the following categorizations or "pillars" in its notification: (1) Enterprise Resource Planning ("ERP"), which encompasses applications that manage the optimal use of enterprise resources such as employees, assets and finances. This category would include the pillars Financial Management Systems (FMS), Enterprise Project Management (EPM) and Human Resources (HR). (2) Customer Relationship Management (CRM) encompasses applications that automate customer-facing business functions (that is to say, sales, marketing, customer service and support, call centers and all the processes related to the automation of sales: order processing, contact management, information sharing, inventory monitoring and control, order tracking, sales forecast and analysis etc.). (3) Supply Chain Management (SCM) encompasses applications that automate the process of planning, producing and delivering a good or service to market (supply planning, manufacturing, order fulfillment, distribution and logistics, sourcing and procurement)."*[12]

The Parties provide below market shares by vendor for 2006 and 2007 for each of the three EAS pillars- ERP, CRM and SCM.

Enterprise Resource Planning (Enterprise Resource Management, per IDC)

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[12]   Case COMP/M.3216 *Oracle/Peoplesoft*, paragraph 18.

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Enterprise resource management applications are designed to automate and optimise business processes related to resources required to meet business or organizational objectives. The resources automated include people, finances, capital, materials, and facilities. The resulting applications forecast, track, route, analyze, and report on these resources.

Market size.   The total worldwide revenue for ERP (or ERM per IDC) in 2007 amounted to USD 32.9 billion (approximately EUR 24 billion) according to IDC,[13] with a growth rate in 2007 of 7.5%.

Vendor shares.   The table below shows the shares (by revenue) of Oracle and other players on a worldwide basis for ERP for 2006 and 2007 as estimated by IDC.

ERP shares by vendor 2006-2007

ERP share (%) Vendors		IDC	
		2006	2007
1	SAP	21.9	22.7
2	Oracle	11.47	11.8
3	Sage Group	4.28	4.3
4	Microsoft	3	3.4
5	Infor	3	2.9
6	Lawson Software	3	1.2
7	Others	53.35	53.7
Total		100	100

Source: IDC, *Worldwide ERP 2008-2012 Forecast and 2007 Vendor Shares,* September 2008.

There is no overlap between Sun and Oracle in ERP. The market is highly fragmented with over 50 vendors having revenues of overUSD 50 million in 2007. The main ERP vendors are SAP, Oracle Microsoft, Sage, Infor and Lawson.

Customer Relationship Management (CRM)

CRM enterprise applications automate the customer-facing business processes within an organization irrespective of industry specificity (*i.e.,* sales, marketing, customer support, and contact centre). Collectively, these applications serve to manage the entire life cycle of a customer, including the conversion of a prospect to a customer, and help an organization build and maintain successful relationships.

Market size.   The total worldwide revenue for CRM in 2007 amounted to USD 14.8 billion (approximately EUR 10.79 billion) according to IDC,[14] with a growth rate in 2007 of 13%.

Vendor shares.   The table below shows the shares (by revenue) of Oracle and other players on a worldwide basis for CRM for 2006 and 2007 as estimated by IDC.

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[13]   IDC, *Worldwide ERP 2008-2012 Forecast and 2007 Vendor Shares,* September 2008.

[14]   IDC, *Worldwide CRM Applications 2008 Vendor Shares: Oracle and SAP Dominate the Top,* July 2008.

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CRM shares by vendor 2006-2007

CRM share (%) Vendors		IDC	
		2006	2007
1	Oracle	9.6	10.3
2	SAP	9	9.4
3	Avaya Inc.	5.75	5.6
4	Salesforce.com	3.4	4.2
5	Siemens	5.2	3.9
6	Cisco	3.2	3.9
7	Others	63.85	62.7
Total		100	100

Source: IDC, *Worldwide CRM Applications 2008 Vendor Shares: Oracle and SAP Dominate the Top*,
July 2008.

As Sun is not active in CRM, there is no overlap between the Parties in CRM. The
market is characterised by a large number of vendors as can be seen from the fact that
Oracle, the leading CRM vendor, only has a share marginally exceeding 10%.

Supply Chain Management (SCM)
Supply chain management application software automates supply- and demand-side
business processes that bring a product or service to market, including multisite
organizations involved in a complex supply chain process, ranging from raw materials
suppliers to contract manufacturers to individual transportation and warehousing
organizations.   SCM applications include logistics, inventory management and
production planning applications.

Market size.   The total worldwide revenue for SCM in 2007 amounted to USD 7.14
billion (approximately EUR 5.20 billion) according to IDC,[15] with a growth rate in
2007 of 11.8 %.

Vendor shares.   The table below shows the shares (by revenue) of Oracle and other
players on a worldwide basis for SCM for 2006 and 2007 as estimated by IDC.

SCM shares by vendor 2006-2007

SCM share (%) Vendors		IDC	
		2006	2007
1	SAP	19.1	19.8
2	Oracle	8.1	8.4
3	Manhattan Associates	3.0	2.9
4	Infor	2.9	2.8
5	Microsoft	2.6	2.6
6	JDA Software	2.4	2.5
7	Others	61.9	61
Total		100	100

Source: IDC, *2008 Worldwide Software Market Forecaster – Historical*, June 2008.

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[15]   IDC, *2008 Worldwide Software Market Forecaster – Historical*, June 2008.

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The Parties' activities do not overlap in SCM. SAP is the clear leader in the market with a share more than twice that of Oracle. Apart from the main vendors (SAP, Oracle, Infor, JDA, Manhattan Associates and Microsoft) there are several hundred other vendors accounting for more than 60% of the market.

83 *Please provide gross and net margins of Sun in (i) the licensing of data IP rights, and (ii) middleware software.*

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84 *Please provide gross and net margins of Oracle in (i) enterprise application software and (ii) middleware software.*

Oracle does not measure gross or net margins by product, and is not in a position to provide this information.

IV. Vertical integration in the technology stack

85 *Please provide the market share of SPARC in the CPU market.*

The SPARC share of CPUs, by factory revenue, Q1 CY09, is 10.2%. [20]

86 *You submit in paragraph 186 of the second draft form CO that the E-business suite was originally engineered to take advantage of some features of the Oracle databases. Please indicate whether the E-business suite is now compatible with other databases than Oracle's. Please also indicate which proportion of Oracle's turnover in enterprise applications software is achieved with E-business suites. Finally please indicate whether the other Oracle's enterprise application software are compatible with non-Oracle databases.*

As mentioned in the Form CO paragraph 186 Oracle has a large portfolio of enterprise applications including the Oracle E-Business suite PeopleSoft Siebel and Hyperion. The E-Business suite was originally engineered to take advantage of some features of the Oracle database when Oracle was not at all present in the applications market. Oracle has seen no customer demand to run the Oracle E-business suite on Microsoft or IBM and for that reason and the historical reasons the E-Business suite runs on the Oracle Database.

Conversely, Oracle has supported all of its acquired applications on all databases and has continued to deliver new releases which support all database technologies. Regarding Oracle's view of interoperability Oracle works extremely hard to ensure that the E-Business suite can interoperate using industry standards with other horizontal applications and one often sees the E-Business suite running alongside PeopleSoft Siebel and SAP.

In fiscal 2009, the total turnover from E Business suites represented approximately 18% of Oracle's total revenues for applications software.

Source: IDC Worldwide Quarterly Server Tracker, May 2009.

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V. Others

87. Paragraph 19 mentions (in response to the first questionnaire by the Commission of 12 Mar. 2009) that Sun's overall financial condition has been poor. It still remains unclear why Sun, with the valuable assets it owns, has seen its financial performance decline. Is this reason the decrease of Sun's strategic decisions of Paragraph 11?

That is correct. The reasons for Sun's performance are the ones stated in Paragraph 11.

88. Annex 31(4)L, slide 4. It is submitted that Oracle has been contemplating an acquisition of selected Sprite (Sun) software assets. Please indicate which software assets were concerned.

On March 12, 2009, Oracle presented to Sun a $2 billion offer to acquire "Sun's software assets (including but not limited to Java, MySQL and identity management) not related to Sun's core Solaris and storage business." The offer further included payment of certain royalties relating to Java, and proposed a number of other strategic opportunities to pursue between Sun and Oracle. The offer is described in a letter dated March 12, 2009, from Larry Ellison to Sun's Board of Directors. The letter is attached as **Annex 36** of the Form CO.

VI. Contact details

89. Please provide for those markets/core segments by application in which the estimated combined market share exceeds 25%, contact details of the five most important competitors and of the five most important customers of each of the parties.

Please see **Annexes 10 and 11** of the Form CO as amended.

90. Annex 9. Contact details are almost all located in the US, so being for non-US firms (for example SAP or Fujitsu). Please explain why the contact details are out of the home countries. Please add PostgreSQL at the list of database competitors. Please replace the general e-mail addresses at the list of database competitors such as Infobright by more specific e-mail addresses.

For the purposes of creating **Annex 9**, Oracle gathered publicly available information for each firm's general counsel's office. Where contact information for the general counsel's office was not available, Oracle listed contact information for the CEO. Oracle believes that these individuals are in the best position to respond to the Commission's inquiries or to direct the inquiries to the right person. Oracle provided the Commission with the most complete contact information it has available. General email addresses were provided when Oracle did not possess specific email addresses and could not locate specific email addresses from publicly available sources.

The contact information for PostgreSQL is

    Company: PostgreSQL
    Contact: Josh Berkus
    Email: josh@agliodbs.com or josh@postgresql.org
    Phone: +1-415-752-2500

Mr. Berkus's street address is not available, although he lives in San Francisco, California.

The contact information for Fujitsu is:

Company: Fujitsu Limited
Contact: Mr. Richard Christou
Email: Richard.christou@uk.fujitsu.com
Fax: 00442074869327
Tel: 004402070097539
Address: FUJITSU LIMITED, 22 Baker Street, London, W1U 3BW, United Kingdom

The missing emails and phone numbers are as follows:

- Philip T. Ragon (Intersystems Corporation): phillip.ragon@intersystems.com or terry.ragon@intersystems.com
- Toshiaki Kuzuoka (Hitachi): toshaki.kuzuoka@hitachi.co.jp
- Richard Mosher (Ingres): richard.mosher@ingres.com
- Jim Jaglieski (Apache Software Foundation): +1-415-803-2258

Please see **Annex 9** to the Form CO as amended.

91. *Annex 10. Please provide the missing telephone numbers and fax numbers with regard to Oracle's middleware customers. Please provide the missing fax numbers with regard to Innobase DB customers. Please provide the missing fax numbers with regard to Berkeley customers.*

Oracle canvassed its sales force to obtain the most up to date and complete contact information it possesses for each of the customers listed in **Annex 10**. Cells containing the entries "N/A" or "Not Available" were used to indicate situations where Oracle does not possess that particular piece of information for that customer and has no reasonable means of obtaining it. The only obtainable additional information is below:

- EDF: Phone (+33156653769); Fax (+33140427940)
- British Telecommunications PLC: Phone (+442077785108); Fax (+442073565520)
- Telecom Italia S.P.A.: Phone (+390636881); Fax (+390636882965)
- National Grid UK Limited: Phone (+441216232097); Fax (+442070043167)
- Wellington Management Company: Phone (+16179515000); Fax (+16179515250)
- Verizon Services Corporation: Phone (+8884832600); Fax (+3259496916)
- Sprint United Management Company: Phone (+19133154500); Fax (+19136243088)
- Gilead Services Inc: Phone (+16505743000); Fax (+16505789264)
- Deutsche Post IT Services GMBH: Phone (+420288802397); Fax (+420288880888)
- Credit Suisse AG: Phone (+12123252000); Fax (+12123256665)

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Please see **Annex 10** of the Form CO as amended

92. *Annex 11. Please provide the missing telephone numbers, fax numbers and emails with regard to Sun's middleware customers, Sun's Java customers, and Sun's database customers.*

Please see **Annex 11** as amended

93. *Annex 13. Please provide the complete contact details of the Monty Program AB and the Open Database Alliance Partnerships.*

Monty Program AB:
Monty Widenius
Daahute 14 04500 Tuusula
Tuusula, Finland 04500
Phone: +3589 ...
Fax: +358 9 ...
Email: sales@askmonty.com

Open Database Alliance Partnerships:
Ethan O'Rafferty
395 Oyster Point Blvd Suite 115
San Francisco, CA 94080 USA
Phone: +1 510 500 1221
Fax: N.A.
Email: ethan.opendb@gmail.com
Please see **Annex 13** of the Form CO as amended

94. *Please provide the contact details of the ten largest commercial licensees of MySQL.*

Please see **Annex 11** of the Form CO as amended

95. *Please provide the contact details of the ten largest service customers for MySQL which entered service and maintenance agreements without entering a commercial licensing agreement.*

Please see **Annex 11** of the Form CO as amended

96. *Please provide the contact details of the data licensees who compete with Oracle first provided in Annex 25. Please provide a description of the activities of these companies which overlap with Oracle's activities.*

Please refer to **Annex 25** to the Form CO as amended

97. *Annex 28. Please provide the missing fax numbers and emails of companies providing MySQL technical support.*

Please see **Annex 28** of the Form CO as amended

98. *Annex 32. Please provide the missing fax numbers and emails of the members of the JCP Executive Committees.*

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Please see **Annex 29** of the Form CO as amended

[30] *Annex 31 B (1): MySQL customers – Please provide contact details of Sabre, Craigslist, Wikipedia, New York Times and WellCare.*

Sabre Holdings:
Glenn Harper, Chief Infrastructure Architect
1350 Sabre Drive, Southlake TX 76092
Phone: (682) 605-5151
Fax: (682) 605-8262
No email address is publicly available for Mr. Harper

Craigslist:
Eric Scheide, Chief Technology Officer
1381 9th Avenue, San Francisco, CA 94122
Phone: (415) 566-5844 ext. 121
Fax: (415) 504-6394
Email: legal@craigslist.com

New York Times:
Ranju Prabhu, VP of Software Development
620 Eighth Avenue, New York, NY, 10018
Fax: (646) 428-2197
Email: ranj@nytimes.com
No phone number is publicly available for Mr. Prabhu

WellCare:
Fritz Strom, IT Purchasing and Accounting Specialist
8725 Henderson Road, Renaissance One
Tampa, FL, 33631
Phone: (866) 530-9491
Fax: (813) 262-2802
No email address is publicly available for Ms. Strom

Wikipedia:
Neither Wikipedia nor the Wikimedia Foundation are MySQL customers

These details have been included in **Annex 11** of the Form CO.

Thank you

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